

AMERICAN BEE JOURNAL

JULY, 1917



**"When we receive your Honey
Return mail brings your Money"**

The Fred W. Muth Co.

GET SERVICE LIKE THIS MAN

FRIEND MUTH:—Your letter with check for \$146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.
Yours truly, [SIGNED] ELMER HUTCHINSON.

LAKE CITY, MICH., MAY 5th, 1917.

We Want Immediately! Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right, we will buy. Parties who have Fancy and Number One Comb Honey write us at once. We will buy from 40 to 50 carloads this season.

BEESWAX

Send us your Beeswax. We pay highest market prices, and send you our check the same day shipment is received.

OLD COMBS

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping Cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping cases. Several carloads are here now ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

REMEMBER We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

THE FRED W. MUTH CO.

"The house the bees built"

204 Walnut St., Cincinnati, Ohio

BEES AND QUEENS, GOLDENS AND LEATHER COLORED FOR 1917

Canadian and United States Trade

We are now booking deliveries in June and July at the following prices, viz.:

FROM PENN. MISS.					FROM TORONTO, ONTARIO.				
Prices 1 and over	1	6	12	25 to 100	1	6	12	25 to 100	
Untested.....	\$.85	\$4.50	\$8.00	\$.65 each	\$1.00	\$4.80	\$ 0.25	\$.75 each	
Warranted.....	1.10	5.00	0.50	.75 "	1.35	5.80	10.75	.85 "	
Tested.....	1.50	7.50	13.50	1.05 "	1.75	7.80	14.75	1.15 "	
Breeders.....	3.00	to \$10.00 each.			3.00	to \$10.00 each.			

POUND PACKAGES WITH UNTESTED QUEENS

FROM PENN. MISS.				FROM TORONTO, ONTARIO			
	1 to 5	6 to 25	over		1 to 5	6 to 25	50 over
	each	each	each		each	each	each
1-pound and Queen.....	\$2.25	\$2.00	\$1.90	\$3.00	\$2.75	\$2.65	
2-pound and Queen.....	3.00	2.75	2.65	4.50	4.25	4.00	

Prices on full colonies and nuclei quoted on request.

We supply THE ROOT CANADIAN HOUSE, 54 WOLSELEY ST., TORONTO, ONTARIO, CANADA, with large shipments almost daily during the above months, frequently moving almost a car of packages to them at a time. This is the most successful way of serving Canadian trade. This firm has our entire Agency for the Dominion, and all Canadian business should be addressed to them unless you wish shipments made direct from Penn. Miss., address us.

At the time of booking order, remit to percent as a form of good faith on your part with balance to be remitted a few days prior to date of shipment. We move orders promptly. Our references, any Mercantile Agency, The A. I. Root Co. or American Bee Journal.

When you deal with us it means satisfaction. Health Certificates furnished with each and every shipment of bees. This assures you that no delays will take place. Safe delivery guaranteed. If interested in bee-hive material, our catalog will be sent on request.

THE PENN COMPANY, PENN, MISS., U. S. A.

SELECT ITALIAN BEES

by the pound. Nuclei QUEENS. 1917 prices on request. Write,

J. B. HOLLOPETER, Rockton, Pa.

CASH

paid for butterflies, insects. Some \$1 to \$7 each. Easy work. Even two boys earned good money with mother's help and my pictures. Descriptions, price list, and simple instructions on painlessly killing, etc. Send 3c stamp at once for prospectus. SINCLAIR, Box 244, D 41, Los Angeles, Cal.



B E E S

If you are thinking of buying bees this spring, we would be pleased to hear from you. We furnish full and nucleus colonies, bees by the pound, and queens.

A strong colony of Italian bees with a tested Italian queen, in a new 8-frame dovetail hive, complete with super, for \$11.00. Tested Italian queens, \$1.50. Untested, \$1.10.

Our catalog of bee supplies, honey jars, and everything a beekeeper uses, mailed upon request.

I. J. STRINGHAM

105 Park Place, New York

Home Apiary: Glen Cove, L. I.

WESTERN BEEKEEPERS!

We handle the finest line of Bee Supplies. Send for our 68 page catalog. Our prices will interest you.

The Colorado Honey-Producers' Association

1424 Market Street, Denver, Colo.

BEE-SUPPLIES

Let Us Figure With You

We know we can satisfy you on price and quality. Write for catalog.

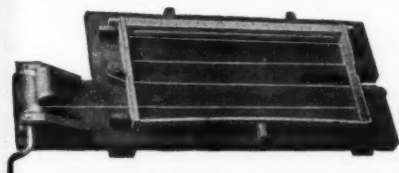
C. C. Clemons Bee-Supply Co.

Dept. S., Kansas City, Missouri

Poultry Supplies

Poultry supplies of all kinds, best automatic grain feeders, fountains, feed troughs, dry mash hoppers, bone mills, exhibition and shipping coops, leg bands, shell, grit, bone, meat, foods, and remedies **ANYTHING YOU WANT.** Also Pigeon, Kennel and Bee Supplies. Circular free.

Eureka Supply House
Box B-403, - Aurora, Illinois



PATENTED
WRIGHT'S FRAME-WIRING DEVICE

Most rapid in use. Saves cost of machine in one day. Tighter wires, no kinks, no sore hands. Price, \$2.50, postpaid in U. S. A.

G. W. Wright Company, Azusa, Calif.

Why Not Get What You Want, And When You Want It?

The Atchley Queens and Bees need no recommendation to the beekeeping world. They have been buying them for FORTY YEARS, AND ARE STILL DOING IT.

BOOK YOUR ORDERS NOW!

One-pound package, \$1.40 each; 25 for \$32.50; 100 for \$125. Two-pound packages, \$2.25 each; 25 for \$52.50; 100 for \$210. Two-frame nuclei, \$2.30 each; three-frame, \$3.25 each. No queens. Untested queens, Italian or Carniolan, \$1.00 each, or \$10 per dozen; 100 for \$70. A big lot of fine tested queens cheap. Write for prices. Prices on bees and queens in large lots quoted on application.

WM. ATCHLEY, Mathis, Texas
The Texas Bee and Honey Man

FILMS DEVELOPED

All roll films developed for 10 cents. We return them the same day. Everything in the KODAK Line. Send for catalog.

F. M. ALEXANDER
Atlantic, Iowa



3-BANDED ITALIANS

From May 1 until June 1

Untested, \$1.00; 6, \$4.50; 12, \$8.00. Tested, \$1.25; 6, \$5.50; 12, \$10.50

From June 1 until Nov. 1

Untested, 75c; 6, \$4.00; 12, \$7.50. Tested, \$1.00; 6, \$5.00; 12, \$9.00. Select tested \$2.00 each. Circular free.

JOHN G. MILLER

723 C St., Corpus Christi, Texas

NEW BINGHAM BEE SMOKER

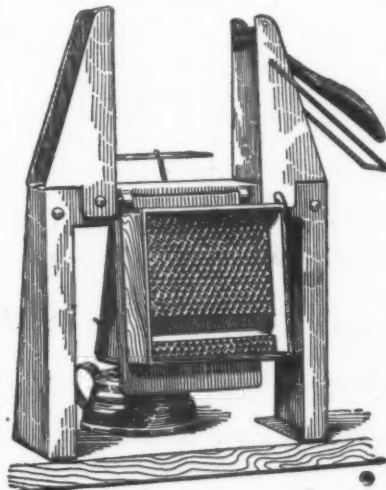
In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham, of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey Knife for nearly thirty-five years, and in 1912 becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general beeware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men, and it gives us much pleasure to help perpetuate his name in the beekeeping industry.

Bingham Smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4 inch stove.....28 oz. \$1.25
Doctor, 3 1/2 inch stove.....26 oz. .85
Two larger sizes in copper extra
Conqueror, 3-inch stove.....23 oz. .75
Little Wonder, 2 1/2-inch stove..16 oz. .50
Hinged cover on the two larger sizes, postage extra.



A. G. WOODMAN CO., Grand Rapids, Michigan



WOODMAN'S SECTION FIXER

A combined section press and foundation fastener of pressed steel construction. ONE OF THE GREAT ADVANTAGES this machine has over all others on the market, in the putting in of top and bottom starters is, YOU ALWAYS HANDLE LARGE PIECES OF FOUNDATION. You know how hard it is to set small narrow pieces for bottom starters. With this machine a large piece of foundation is set and the hot plate is again used to cut it off, leaving the narrow bottom starter. What is left of the large piece is then set for the top starter.

Price of machine, \$250; with lamp, \$275. Weight, 5 lbs.; postage extra.

Another advantage is the section always comes away from the machine right side up with the top starter, large piece, hanging down, and does not become loosened in reversing as with other machines.

A. G. WOODMAN CO.,
Grand Rapids, Michigan

TIN HONEY PACKAGES

Do not wait longer, but secure your honey packages at once. The tin plate situation is becoming more serious from day to day. Freight traffic is slow and uncertain. We placed our order for tin plate for our 1918 Bee Smoker Trade some time before a state of war was declared. We dared not wait longer, for fear we could not secure it at all. Our three year contract on tin honey packages is still being honored, and runs until Jan. 1, 1919. We are saving money for carload buyers and others of smaller lots. Send us a list of your requirements. Do not delay. Act at once.

Friction Top Tins

	2 lb. Cans,	2 1/2 lb. Cans,	3 lb. Cans,	5 lb. Pails,	10 lb. Pails
Cases holding	24	24	12	12	6
Crates holding	100	100	50	50	25
Crates holding	100	100	100	100	100
Crates holding	603	450	203	113	

A. G. Woodman Co., Grand Rapids, Mich.



**Colored
Bee Hive
Markers**

PRICES—12 for 20c; 24 for 40c; 50 for 75c; 100 for \$1.25. Large quantities, write us. Made in many colors. Furnishes means for a better control of the bees. Sample and catalog free.

Arthur P. Spiller, Box H, Beverly, Mass.

Miller's Strain Italian Queens

By return mail, northern bred from my best superior breeders. In full colonies; for business; three banded; gentle; hustlers; winter well; not inclined to swarm; roll honey in. Unt., \$1.00; 6 for \$5.00; 12 for \$9.00. Sel. unt., \$1.25; 6 for \$6.00; 12 for \$11.00. Virgins 1 to 3 days old at 50c each at senders risk. Safe arrival and satisfaction guaranteed in United States and Canada. Specialist of 20 yrs. experience.

ISAAC F. MILLER, Brookville, Rt. 2, Pa.

THE GUARANTEE THAT MADE "falcon" Bee Supplies Possible

The "falcon" GUARANTEE. Every hive, every super, every crate of sections, every pound foundation every article, and every queen leaving the "falcon" plant goes out with our "absolute satisfaction or money back" guarantee. For more than a third of a century we have stood behind everything we sell. If anything is wrong or not just what you thought it would be, we'll appreciate it if you write us, and we'll make it absolutely right at our expense. Our satisfied customers are to be found everywhere and are our best advertisement. "Once a customer always a customer," is synonymous with the name "falcon"

The beekeepers' past experience when "short" should have taught him that it's a "wise move" to get hives, sections and supplies ready in the next two months. We will be glad to quote on "falcon" supplies if you will send us an approximate list of what you will require for the coming season.

Red Catalog, Postpaid

Dealers Everywhere

"Simplified Beekeeping," Postpaid

W. T. FALCONER MFG. CO., Falconer, New York

Where the good bee-hives come from

HONEY NOTICE HONEY WANTED

Do not forget when your crop of honey is ready for sale to send us a sample, state your lowest price, and also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Company
2146 Central Ave., Cincinnati, Ohio

Tennessee-Bred Queens

45 Years' Experience in Queen-Rearing

Breed 3-Band Italians Only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.....	\$1.50	\$7.50	\$13.50	\$1.25	\$6.50	\$11.50	\$1.00	\$5.00	9.00	\$.75	\$4.00	\$.75
Select Untested..	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Nuclei (no queen) 1 fr., \$1.50; 2 fr., \$2.15; 3 fr., \$2.75; 4 fr., \$3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year

Select queen tested for breeding, \$5.00

The very best queen tested for breeding, \$10.00

JOHN M. DAVIS, SPRING HILL, TENN.

3-BAND ITALIAN QUEENS

Produce Workers

That fill the super quick with honey nice and thick. They have won a world wide reputation for honey gathering, hardiness and gentleness. Untested, 40c; 6, \$2.25; 12, \$4.00. Tested, 75c; 6, \$4.00; 12, \$7.50. We guarantee safe arrival and satisfaction.

S. D. CHEATHAM & CO.

Rt. 4, Greenville, Ala.

The apiaries for queens of dependable quality

POULTRY, FRUIT, BEE PAPER COMBINATION \$1.50

Poultry and Fruit are allied pursuits for the beekeeper. Here is a special combination of three papers which gives excellent reading at a low cost:

The Fruit Grower..... .50
American Poultry Advocate..... .50
American Bee Journal..... \$1.00

Our price for all three for one year is only \$1.50. Or if you want two poultry papers, add 25c to the above offer and get your choice of the following one year:

Reliable Poultry Journal, Poultry Success
American Poultry World, Big Four Poultry
Journal, Poultry Tribune, Poultry Item.

Send all orders to
AMERICAN BEE JOURNAL, Hamilton, Ill.

GOLDEN ITALIAN QUEENS

Read a few reports of big yields from single colonies of this gentle strain of Goldens: H. E. Bartz, Keytesville Mo., 264 pounds of extracted honey; J. M. Buchanan, Franklin, Tenn., 250 pounds of extracted honey; L. C. McCarty Nampa, Idaho, 250 pounds of comb honey; Fred Dury, Unionville, Mo., 374 pounds of comb and extracted honey.

I guarantee safe arrival (U. S. and Canada), purity of mating and satisfaction. Write for circular.

—Prices of Queens—

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	\$1.50	\$ 7.50	\$13.50	\$1.25	\$ 6.50	\$11.50	\$1.00	\$ 5.00	\$ 9.00	\$.75	\$ 4.00	\$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.00	12.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	16.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Select queen tested for breeding, \$5.00.

The very best queen tested for breeding, \$10.00

BEN G. DAVIS, Spring Hill, Tennessee

FOREHAND'S QUEENS

15 LBS. SURPLUS

Which Colony is Yours, Mr. Beekeeper?

150 LBS. SURPLUS

GET A GOOD QUEEN

One that will keep the hive chock-full of bees at all times, make the biggest yields of honey, stingless, and look the prettiest at a medium price. Over 25 years of select breeding has brought our queens up to a standard surpassed by none and superior of many. We have tried the principal races and every method known, and we have now selected the best of both. THE DOOLITTLE METHOD and the THREE-BAND BEES. Use the 3 Bands Why? Because they get results. The foremost bee-men of the world use them. Our queens are sold by many of the largest dealers in the United States.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says: "Three-band Italians have proven the best all-round purpose bee after trying out nearly every race, not only in an experimental way while still at A. M. College, but in our own apiaries as well."—(In Beekeepers' Items.)

Untested.....	\$ 50	\$ 3.00	\$ 6.00	Tested.....	\$1.50	\$ 8.75	\$17.00
Select untested.....	.75	4.25	8.00				

Write for prices on large quantities

W. J. FOREHAND & SONS, Ft. Deposit, Ala.



TYPEWRITER SENSATION

\$2⁵⁰ A Month Buys L. C. Smith
a Visible Writing

Perfect machines only of standard size with keyboard of standard universal arrangement—has Backspace—Tabulator—two color ribbon—Ball Bearing construction—every operating convenience. **Five Days' Free Trial.** Fully guaranteed. Catalog and special price free. **H. A. SMITH, 314-231 North Fifth Avenue, Chicago, Illinois**

QUEENS OF QUALITY

Capacity of my yards over 1000 Queens a month

After 20 years of careful selection and breeding, I now have a strain of bees that cannot be excelled by any. My queens are all bred from IMPORTED STOCK, the very best in the world for honey gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

G U A R A N T E E

You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated and to give perfect satisfaction. All queens that do not give satisfaction I will replace. Send for circular.

Untested.....	50c each.		
Select untested.....	.75	4.25	8.00
Tested.....	1.25	7.00	13.00
Select tested.....	2.00	11.00	20.00

If queens are wanted in large quantities, write for prices.

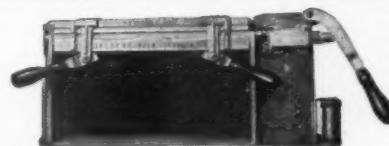
L. L. FOREHAND, Ft. Deposit, Alabama

TEXAS QUEENS



Golden and 3-Banded Italians and Carniolans, fine workers. Queens, 75 cts. each; \$8.00 per doz. Bees in pound packages, \$1.25; 2-lb. pack. \$2.25. Your satisfaction my object.

GRANT ANDERSON
Rio Hondo, Texas



PAT. APPLIED FOR

C. O. BRUNO NAILING DEVICE

Made for the Huffman Brood Frames. A combined Nailing, Wiring and Wedge Clamping Device. Does the work in half the time. Has been tried and is guaranteed to do accurate work. Makes the frames ready in one handling. Price \$6.50.

Complete directions for operating are furnished with each device.

Manufactured by C. O. BRUNO
1413 South West Street, Rockford, Illinois

BARNES' Foot-Power Machinery



Read what J. I. Parent of Charlton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc., to make with this saw. It will do all you say of it." Catalog & price-list free

W. F. & JOHN BARNES
995 Ruby St., ROCKFORD, ILLINOIS.

Murry's Queens

THREE-BANDED ITALIANS
GOLDEN ITALIANS

The best of either. Orders filled in rotation or money refunded. Untested, 75 cents. Tested, \$1.00.

H. D. MURRY, Mathis, Texas

LEWIS BEEWARE

Is at your very door

**Send to Your Nearest Lewis Distributer for
LEWIS HIVES**

and

LEWIS SECTIONS

Hold to the "Beeware" Trade Mark

It is Your Safest Guide Post



LEWIS DISTRIBUTERS:

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Porto Rico	—	Ponce,	Prats & Vicens,
Tennessee	—	Memphis,	Otto Schwill & Co.,
Texas	—	San Antonio,	Texas Honey Producers,
Washington	—	Seattle,	Chas. H. Lilly Co.,
Wyoming	—	Wheatland,	Fred M. Harter,

G. B. LEWIS CO., Manufacturers, Watertown, Wis.



Vol. LVII.—No. 7

HAMILTON, ILL., JULY, 1917,

MONTHLY, 1.00 A YEAR

BEES IN COMBLESS PACKAGES

Notes on the Pound Package Business as Seen by Frank C. Pellett
on a Visit to the Southern Shippers

THE readers of the American Bee Journal have manifested so much interest in the possibilities of the combless package that it seemed advisable to find out just what the shippers are doing. Accordingly, when word came from the office to pack my grip and see what I could find of interest in the South, I went prepared for several weeks' stay and several thousand miles of travel. Most of the combless packages are shipped from Georgia, Alabama, Mississippi and Texas. Texas is so far removed from the other States mentioned that it did not seem advisable to include that State with the others mentioned.

The trip outlined included visits to as many of the queen-breeders and package men as it was possible to reach in the month of time available. From Chicago the trip was made South by way of Cincinnati with stops in Kentucky, Tennessee, Georgia and Florida. The return was made through Georgia, Alabama, Mississippi and western Tennessee. It is not the intention to give a consecutive account of the trip, but rather to answer the queries of our

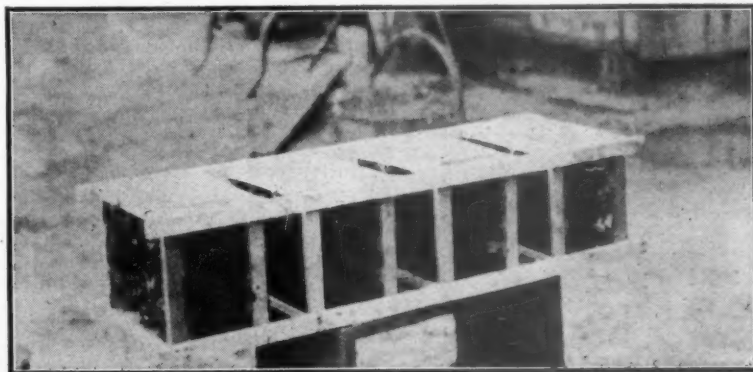
readers as far as possible concerning the package business and other matters relating to the South. A later article will deal with the possibilities of commercial honey production with notes on the sources of honey in different localities.

The shipment of bees in combless packages is about the latest development of importance in commercial beekeeping. It is so new that extensive beekeepers have hesitated to order bees in quantity for fear of failure. Most of the orders have been for from one to half a dozen packages even from the most experienced beekeepers. So successful have these shipments been that this year, for the first time, large orders are the rule and single orders require from a dozen packages to more than a hundred. The possibilities of shipping bees in packages are just beginning to be realized.

All the package men visited were being snowed under with orders before the season of shipment arrived. I left home early in March, and was, accordingly, a little early for the purpose for which I went, although all were pre-

paring for the opening of the season at the time of my visit. The indications are that the package business will develop very rapidly and that the demand will exceed the supply for several years to come.

Much more capital is necessary to handle a package business successfully than is needed for a queen business or a honey business. The season is comparatively short, and unless the shipper has a large number of colonies to draw



POUND PACKAGES AS THEY ARE CRATED FOR SHIPMENT. NO DANGER OF SUFFOCATION FOR LACK OF VENTILATION



A. B. MARCHANT, UNION SPRINGS, ALA.

from the business will not be successful. M. C. Berry, of Hayneville, Ala., began operations with 900 colonies this season, and had about reached the limit of his capacity to fill orders by the time he was ready to send out the first shipments. At that, new orders were coming in every mail. The beekeeper who undertakes the package business with only a limited supply of bees to draw from is quite likely to be disappointed with results, and many will fail. The pound package shipper should first be a queen-breeder, since he can hardly depend upon buying queens in sufficient numbers to fill orders. Most orders are for bees with queens. So many packages shipped without queens are lost in transit, that some shippers are considering accepting such orders at the buyers risk only. My attention was called to the difference in behavior of the bees in packages with queens and those without them. The queenless bees were restless and kept up a continual buzzing which indicated that they would hardly arrive at their destination in good condition. The bees with queens clustered quietly and apparently were little disturbed by their confinement.

On my visit to Canada last June, I found some of the extensive producers considering the question of extracting all their honey in the fall and buying bees from the South the following spring, instead of wintering the large number of bees which is necessary for their extensive operations. They figured that it requires at least \$4.00 worth of honey to carry each colony through. For the same cost, they buy a 3 pound package with queen in the spring and eliminate the winter losses. A few were experimenting in a small way with this idea in mind, but I did not find any one who had definitely decided that it would pay.

This plan is not at present possible on any general scale because of the fact that no sufficient source of supply is available. It is now a demonstrated fact that it is as cheap to buy bees in packages and place them on combs in spring, as to make late increase to winter over. The beekeeper who plans to

make heavy increase will find it advisable to get as many combs drawn as possible during his honey harvest for the purpose of having them ready, and then buy the bees the following spring. The shippers guarantee the safe delivery of the packages, so that there is little risk to the buyer.

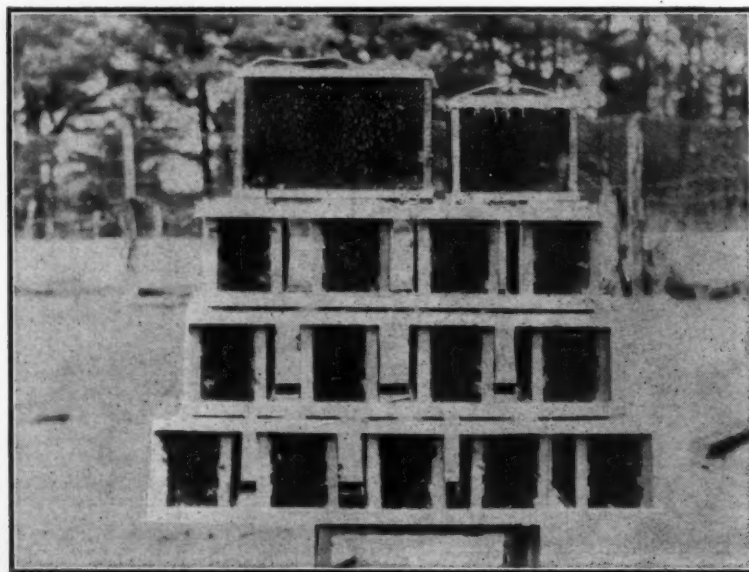
Even in Iowa I figure that it costs me as much in stores to winter my bees, as package bees would cost, without the risk of winter losses. While I would hesitate to destroy colonies already on hand rather than provide the necessary honey for wintering, I can see no particular advantage in making my own increase in quantity, especially in a good season. It is only fair to state, however, that this conclusion has been reached from the experiences of men in the North who have bought bees in packages rather than from actual personal trial.

The shippers visited were J. E. Marchant Bee & Honey Company of Columbus, Ga., A. B. Marchant, of Marchant Bros., of Union Springs, Ala., W. D. Achord, of Fitzpatrick, Ala., M. C. Berry, of Hayneville, Ala., and J. D. Smith, of the Penn Company of Penn., Miss. It was raining most of the time of my visit at Columbus, and the pictures taken there were disappointing. Photographs of the men mentioned are shown herewith. All the firms above named are well equipped for business, although all alike were somewhat nervous about the rainy backward spring, and felt anxious about being able to make deliveries as early as purchasers desired. If the weather has been as unfavorable elsewhere as it has in this part of Iowa since my return, the purchasers will suffer no particular inconvenience because of a little delay.

Some shippers have their colonies



M. C. BERRY AND COLORED ASSISTANT FILLING POUND PACKAGES AT AN OUTYARD



THE FIRST SHIPMENT OF THE SEASON FROM HAYNEVILLE, ALA.

from which orders are to be filled about three stories high. Queen excluders are over the brood-chambers, and no bees are taken from below the excluder. The packages are filled in the middle of the day when the old bees are in the field, so mostly young bees go into the packages. This insures the safe arrival of the package under favorable conditions, and also that there will be no dwindling before there is time to rear brood. At the same time it insures that no colony will be unduly reduced, so that when the package season is over, all colonies will be strong enough to store some honey from the late flows.

The great difficulty with beekeeping in the South is the fact that because of the mild climate brood-rearing continues throughout most of the year. Thus, enormous stores are consumed and there is much difficulty in the control of swarming in some localities. Where the main flow is late in the season, it is thus easily possible to control early swarming by removing the surplus bees to fill packages, and at the same time keep the colonies strong enough for



J. E. MARCHANT, OF COLUMBUS, GA.

the flow when it comes. The combination of packages with honey production insures a safe and satisfactory income.

The package business on a large scale will hardly prove practical except in the South, since most of the orders are for deliveries in April and May. It would be extremely difficult in the northern States to induce bees to breed up to a point where such orders could be filled at a time when there was a demand. The South then will continue to be the source of bees in combless packages. Because of the long breeding season and the mild winters, this branch of the business of beekeeping can be expected to become increasingly popular in southern States.

The package business has not, as yet, passed beyond the experimental stage in some respects. There is no stand-

ard cage, each breeder having his own ideas about cage construction. Some shippers feed from the end of the cage and some from the top. Top feeding would seem to conform more nearly to the habits of the bees in clustering below their stores. As nearly as I have been able to gather from the reports at hand, there is a smaller percentage of losses in transit where the bees are fed from the top of the cage rather than from the end.

It is important that there be a sufficient amount of candy, and that it be of exactly the right consistency. Candy that is too soft runs and musses things up, while if the candy is too hard the bees will die for lack of food. The novice should be very careful to fully inform himself in regard to making suitable candy before attempting to ship bees for any distance in packages. There have been numerous losses from unsuitable candy.

The shipper must exercise care in crating the packages in such a way that it is impossible for careless express messengers to smother the bees by piling other packages over them. The illustration shows how four packages are fastened together by means of strips. Two or three inches of space between the packages insures a liberal supply of air. The other picture of packages, is simply the first day's business from the Berry apiaries piled up ready to go to the express office. A few days later all the shippers were sending out packages in large numbers.

The picture of Mr. Berry will give a good idea of the way in which the packages are filled. The empty cage is placed on a small scale so that the weight can be readily noted. The large tin funnel slides the bees into the package the easiest way. The slip is so easy that they never seem to know what is happening until the job is done and the hole closed. The feed for the journey is placed in the cage before the bees are put in.

It is hardly within the scope of this article to narrate the incidents of the visits to the various apiaries, but we take this opportunity to present to our



W. D. ACHORD AND HIS ASSISTANTS, H. C. SHORT AND FELIX BROWN

readers pictures of several of the more extensive package shippers, taken right in the bee yards. These mens' names are all well known to our readers, because of their advertising. All are enlarging their equipment to prepare for increased business in the future for the package business has come to stay. New names will appear from time to time, and men who are well known as queen-breeders or honey producers, can be expected to launch into the package business also. Apparently the business of beekeeping is yet in its infancy, and we may expect to see greater development in the next 25 years than the old timers have seen in a life time. Atlantic, Iowa.

IN SPITE OF POOR CARE

This spring I have had occasion to examine a lot of bees which have received little attention for several years past. In spite of the winter which resulted in heavy losses, many colonies in hives which were so rotten that they would not bear lifting contain very strong colonies. It is a little surprising that a colony will come through such a winter in a hive with the bottom rotted out and with cracks an inch or more in diameter in the corners. Some of the covers even were loose and had cracks as wide as a hive-tool. When bees under such conditions come through the winter in as good condition as those which were carefully packed in winter cases and given all the coddling that a fussy beekeeper knows how to bestow it makes one think that we have not yet learned all about wintering. Probably it is only the vigorous colonies that survive at all under such conditions. However, we fail to see how the advocates of sealed covers and no upward ventilation can reconcile such cases with their arguments.

F. C. P.



J. D. SMITH, MANAGER, AND S. E. MERRILL, QUEEN BREEDER OF THE PENN CO., PENN., MISS.



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THE EDITOR'S VIEWPOINT

Wood and Paper Containers for Honey

The paper container for granulated honey which was recommended some years ago in the bee magazines, but which did not seem to suit either the honey-producers or the public, is again mentioned in the press as a substitute for glass or tin vessels which are now scarce and high in price. Gleanings recommends the "Aikin bag," a waxed-paper product, in sizes of 1 to 10 pounds. Mr. F. W. L. Sladen, Dominion Apiarist of Canada, recommends a paraffin-coated bag of 2 pounds capacity, measuring inside $2\frac{1}{2}$ inches x 3, and $5\frac{1}{2}$ inches high. This is supplied in flat at a low price per thousand. It is opened by means of a block, as shown in the engraving.

Barrels are also recommended for shipping honey in bulk. We have used barrels for over 40 years, when harvesting the crop at our outapiaries and would use nothing else. We find them the handiest container and the cheapest until we are ready to put up the honey in small packages of different sizes according to the retail trade demands. The only container which we can compare with barrels is a honey tank. But honey tanks are not convenient to haul to or from the outapiaries, either full or empty, while the barrels may be loaded up and taken away at once.

Not all barrels will do. Years ago, Thos. G. Newman, then editor of the American Bee Journal, recommended and kept for sale cheap wood-bound barrels. We tried them but they were a failure in our hands. Unless barrels can hold the honey without leaking, they are not to be used.

The only barrels that we find satisfactory are second-hand alcohol barrels, bought and kept in a dry place after they have been emptied of the alcohol. Druggists and patent medicine manufacturers can usually supply them.

Whisky barrels will not do, for they have usually been charred in the making. They are preferred for whisky because they give it color, we are told. But these barrels spoil the appearance of the honey by filling it with moats of charcoal which are very difficult to remove. We learned this at our expense, years ago. Alcohol barrels are coated inside with a very light coat of glue, which fills the pores of the wood and the crevices and makes them absolutely tight, unless they have been kept in a damp place or have been used for other purposes. This makes them superior to any whisky barrels for honey. Good barrels having contained syrup or rock candy are sometimes acceptable for honey.

A barrel which has been used to hold water will not do. Neither will a barrel do which has been rinsed with hot water. It will be sure to leak when it dries, and the honey will help dry it. Before using it the hoops of the barrel should be driven as tightly as possible.

Barrels that are not glue-coated inside may be coated with beeswax or paraffin. This coating makes an ideal container. But it is somewhat difficult to do this right, for the wax, when poured in, may cool too fast and cake itself inside, in such lumps as to work loose from the wood. The barrel and the wax must both be very hot. Putting the barrel for a few hours beforehand in the sunshine of a hot July day will help. A good way also is to mix a small quantity of pure lard of best quality with the wax or the paraffin, when melting it. The lard causes the wax to stick better to the walls of the barrel, and if only a small quantity is used and it is free from taint, it will not give any odor or flavor. Pour the hot wax in the warmed up barrel, bung it, and roll it about for a few seconds. Then pour out the surplus. It is astonishing how little will be required if the work is done properly.

The advantage of barrels is that you can draw out your honey and put it up for retail when ready, or you can ship it to the wholesaler, with much less trouble than if the honey has been put up in 60 pound cans. In our experience there is less leakage with sound barrels than with cans. We have often known of a 60 pound can emptying itself in transit, because the case in which it was boxed became unnailed at the bottom and one of the nails was driven through the tin in handling. Such an accident is not to be feared with barrels if the bunghole is securely closed.

Of course if you have no outapiaries, you may put your crop in one or more large tanks and draw from these. But if you let the honey granulate in the tank, it is a rather difficult job to remove it without scratching the tin, which will cause rust the following years. To remove granulated honey from barrels it is of course necessary to take out the head. This may be done with very little trouble and without injuring the barrel in the least. We will give a description of the method we use in our next number.

Helping Increase the Crop

The Government of the United States is taking more and more interest in the production of large crops. Those of our beekeepers who desire it can secure information on beekeeping and good advice by writing to Dr. E. F. Phillips, Apiarist, Bureau of Entomology, Washington. Special pains are taken to help the business of honey production as well as the sales of honey.

Bee Magazines

A friend calls our attention to the fact that, in mentioning the magazines of which we have complete files, we did not mention the British Bee Journal. He wishes to know whether we do not consider it worthy. Yes, it is. The British Bee Journal is, we believe, the only weekly bee magazine in the whole world at present, and it is as regular in its publication as ever, in spite of war conditions.

The only reason why we do not have a full set of this magazine is that we have received it regularly for only about 30 years. It is now in its 45th year.

In our June number will be found a biography of Edward Bertrand, taken almost verbatim from the columns of the British Bee Journal. This is sufficient evidence that we appreciate the magazine in question. Moreover, it is edited by our old, experienced and learned friend, Thos. W. Cowan, thor-

oughly seconded by its junior editor, W. Herrod Hempsall.

Shortage of Glass Containers

The conference of apiarists which met in Washington on April 23 and 24, appointed a committee to investigate the possible shortages of honey containers. To many people this matter might seem of very little importance. Yet when we think of the scarcity of many articles of common usage, we wonder what may cause it.

The committee have made a very interesting report. We cannot give it in full. But it may be of value to our readers to know why glass honey jars are so difficult to secure.

Soda-ash is difficult to obtain on account of its use in munition factories and on account of car shortage. Sand deliveries are also delayed owing to car shortage. Factory hands and especially skilled men have gone to munitions factories. Enlistment is also reducing the help.

Both tin can and glass container manufacturers have been urged to give the preference in orders to containers for food products and in many cases they have agreed to do so. So it is hoped that a sufficient quantity of both glass and tin containers may be supplied in time for the crop.

Quebec Beekeeping

We acknowledge receipt of a copy of the "Methode de Cultiver les Abeilles dans la Province de Quebec," by Hector Beland and Cyrille Vaillancourt, published and distributed by the Minister of Agriculture of the Province of Quebec. It is a bulletin of 68 pages giving the most modern instructions on beekeeping and we commend it to Quebec beekeepers.

Happy

"HAPPY" the life of a bee, by Walter F. McCaleb, published by Harpers, is a short idyll purporting to describe the feelings of a worker-bee from its birth through a life of usefulness. It is quite interesting although of but little practical value.

Parthenogenesis and Sex Determination

Several French bee magazines have lately published a contribution which boldly condemns the discoveries of Dzierzon, Berlepsch, Siebold, Langstroth, etc., and calls their teachings obsolete. It holds that sex in bees is determined by the workers, that the queen lays only one kind of eggs, all fecundated when passing by the spermatheca, and that the workers change

the sex of the eggs which they wish to rear as drones.

The writer of this article gives a method of verification of his theory which he has evidently not tried himself. He recommends the inserting of a comb of worker-brood and eggs from a colony of golden Italians into a queenless colony of pure black bees. He asserts that drones will be produced from some of that worker-brood and that their color will show that they are pure Italians. Our friends across the ocean who are inclined to believe him had better try this experiment, for it has been performed over and over again in this country and is conclusive. They will then easily convince themselves that the whole thing is a fake. Worker-bees can no more change the sex of eggs than we can.

Secretary Redfield Urges Use of Fiber Containers

"Plans for lessening the use of tin cans for products nonperishable, thus releasing large quantities of tin for use in the manufacture of cans as containers for seasonable foodstuffs, have about been completed," Secretary Redfield of the Department of Commerce announces.

"If the public will cooperate, there will undoubtedly be sufficient supply of tin cans to care for the perishable

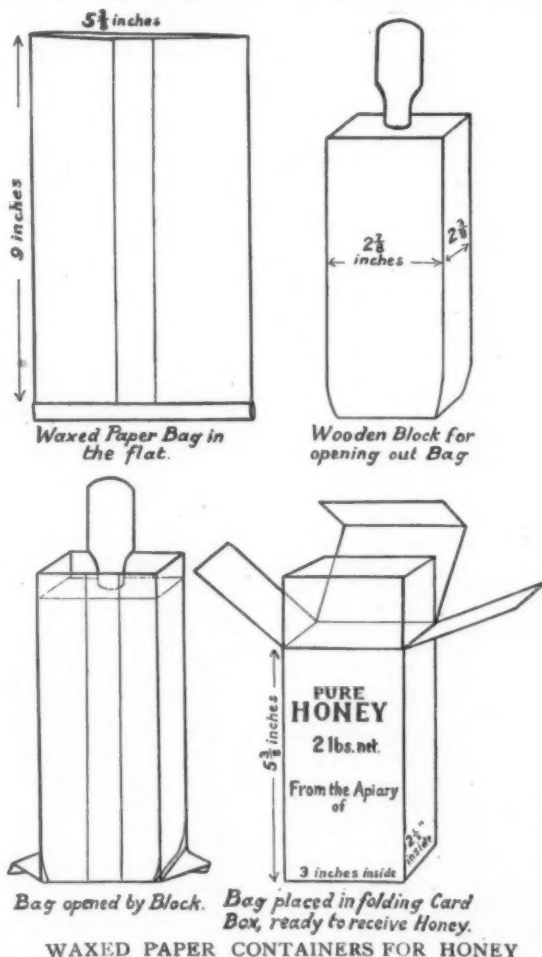
crops for the summer. To this highly necessary condition the individual may assist by accepting goods in fiber or paper instead of tin whenever there is no deterioration in the change. It is exceedingly important that there be tin to preserve the summer vegetables and fruit for use next winter. The housewife who helps us provide that supply by lessening her own demand for tin-packed goods, is undoubtedly 'doing her bit' in a patriotic manner.

"The Bureau of Foreign and Domestic Commerce and the Bureau of Standards of this department, in conjunction with the Department of Agriculture have been working on this problem—and it is a serious one. The result of the joint efforts is a recommendation that many products formerly packed in tin, be packed in the new fiber containers, which are cheaper, are sanitary, and easily disposed of by burning or otherwise.

"Some of the products which it has been suggested may be successfully packed in fiber are: Coffee, tea, tobacco, soap powders, cleaners, shoe and metal polish, soaps and shaving preparations, talcum powders, alum baking powders, spices, condiments, raisins, prunes, and various drugs and chemicals.

Our Cover Page

J. E. Hull, of Maxwell, Iowa, with his pet swarm, is shown on our front cover. This may seem a remarkable feat to our inexperienced subscribers, but nevertheless it is easily done.



WAXED PAPER CONTAINERS FOR HONEY

The Work of the Bee Division of the Dominion Experimental Farms

BY F. W. L. SLADEN, APIARIST, DOMINION EXPERIMENTAL FARMS

[Continued from page 201.]

It is convenient for the purpose of studying honey production in Canada to consider three principal regions. 1. The Eastern, extending from the Atlantic Coast to Winnipeg; 2. The Middle West, extending from Winnipeg across the prairie, and including the dry belt of British Columbia; 3. The Pacific Coast, typified by the Lower Mainland. These regions grade into one another and can be subdivided into a number of more or less definite areas.

The Eastern region, extending from the Atlantic Coast to Winnipeg, has usually sufficient rain, heat and air humidity to make it a good beekeeping country, and nearly all those who make beekeeping their principal or sole occupation are located in this region. The principal crops of honey are three. 1. Clover, alsike and white, extending from mid June to mid July or the end of July. 2. Fireweed, from early July to the end of August. 3. Goldenrods and aster from early or mid August to mid September. Locally in southern Ontario and southwestern Quebec there is basswood during clover bloom, and buckwheat in August. It must not be supposed that the whole of this vast region is a good beekeeping country. The greater part of it is thickly wooded, and there are large rocky areas where very little honey can be obtained.

Alsike and white clover are found principally in the farming country, and seem to reach their best in Ontario south of the Ottawa river. The lake region here steadies the temperature and maintains humidity. At the same time, this being a southern interior section, heat and fine weather seldom fail, and a clover honey crop of about 100 pounds of extracted honey per colony, spring count, may be expected in the better districts where the management is good. Other noted districts for clover honey are the St. Lawrence Valley, where the flow is somewhat shorter than in Ontario and the St. John River Valley. Prince Edward Island gives a steady and late yield, and the farming districts of Nova Scotia are productive, but here the clover plants are sometimes extensively killed by repeated freezing and thawing when the ground is bare in winter and early spring, and too cold and wet weather for much honey production is encountered in some seasons. White clover is very productive around Winnipeg where, however, it occasionally suffers severely from drouth, and alsike and white clover are of value in the northern Ontario dry belt and in the river valleys in northwestern Quebec.

Fireweed is found in partly cleared lands that are not yet in cultivation, especially in rich moist places where timber is decaying, in places recently devastated by fire and in the clay belt or northern Ontario. It needs fine warm weather to secrete well. It is more valuable than clover in the northern part of the Gatineau Valley, and probably at least of equal value in the New Ontario clay belt between North

Bay and Cochrane, and in the swamp lands around and to the east of Molson, Manitoba. Its merits lie in its long season of yield lasting from early July to the end of August, this being the best part of the season, coming two or three weeks later than clover so that the bees have plenty of time to build up, and in the white color and mild flavor of the honey. Averages of about 100 pounds per colony, spring count, appear to have been obtained from this plant during the past seven years in a large apiary at Montcerf, in the Upper Gatineau valley.

Goldenrods and asters are important in certain sections. The different species vary very much in honey-producing value, the nature of the land determining the presence and abundance of certain species. In the wet lands of Charlotte Co., N. B., especially in the Honeydale district, they constitute the principal source of nectar, and they are valuable generally as a source of surplus in the coastal districts of New Brunswick and Nova Scotia, especially in the region of Bathurst, N. B., Moncton, N. B., and Amherst, N. S., also in certain places in the Upper Gatineau Valley and in eastern Manitoba. Probably an average of from 50 to 80 pounds of honey per colony can be gotten from them in places where the best species abound. The honey is usually of good quality and varies in different districts from white to golden. The honey gathered in marshy districts is usually bright golden. The wax is yellow even when the honey is white. The flavor is more or less pronounced, but sometimes very fine, a sample of honey obtained from Honeydale, N. B., having an exquisite flavor and aroma. We may recognize three types of locations for goldenrod and aster which, however, often overlap.

1. Open swamp or bog, the principal plants here are *Solidago uliginosa*, a tall goldenrod of cylindrical inflorescence; *S. rugosa*, a species with spreading inflorescence; *Aster umbellatus*, a tall white-flowered species with a large flat inflorescence, and *Aster puniceus*, a tall and handsome species with hairy stem, clasping leaves and large blue flowers. *S. uliginosa* and *Aster umbellatus* commence to flower early in August. *S. rugosa* and *Aster puniceus* remain in bloom until mid September, so there is a month or five weeks of possible honey flow. The swamp or bog type of location is largely independent of rain during the honey flow, but needs fine weather and moderate warmth.

2. Sandy or gravelly barrens or plains locations in which blueberry is frequently abundant. Here we get *S. puberula*, and in the interior the highly productive *S. squarrosa*, and also asters of the cordifolius group. The honey from these species is gathered very late, during the last week in August and first two weeks in September. Good rains in early August followed by fine and moderately warm weather during the flow are needed to get the best results. The color of the honey produced in a location of this kind at an out-apiary that I established at Kazubazua, Quebec, is nearly white and of a very pleasant flavor.

3. A restricted area with its center in Cumberland Co., N. S., in which *Solidago graminifolia* is a troublesome weed of cultivation. At Amherst in this district the honey gathered in Au-

gust and September is unwholesome for wintering, and the unwholesome honey is possibly the product of this plant. The common goldenrods of the roadsides and waste places in the farming lands of old Ontario are not heavy producers of honey under ordinary conditions.

Goldenrods and asters come into flower earlier in the North than in the South and on the coast.

[To be concluded.]

Fighting Foulbrood

BY F. DUNDAS TODD.

AS I have frequently indicated, we in British Columbia make no pretence of curing foulbrood, we simply wipe out the colony and hive by fire. So far as I know this Province is the only region in the world that is pursuing the policy of total extermination. It may, therefore, be worth while to compile a tabular statement of infected apiaries to see if we cannot draw some practical conclusions therefrom.

Infected apiaries 1914, 1915, 1916, Vancouver District.

	1914	1915	1916
Essondale Total aff.			
Mental hosp. 11 6	11	0	7
Chilliwack			
A 14 3	14	1	7
B 5 2	4	0	0
Vancouver			
C 1 1	0	0	0
D 12 2	10	1	21
E 15 1	11	0	7
F 5 1	4	0	0
G 15 1	12	3	7
H 6 3	3	0	0
I 3 2	1	0	1
K 30 4	21	5	14
L 2 0	2	1	1
M 12 6	4	4	0
N 1 1	0	0	0
O 2 1	1	0	1
P 13 1	8	2	2
Q 3 1	1	0	0
R 2 1	1	1	0
S 12 5	7	0	5
T 8 4	4	0	4
U 7 1	6	0	5
V 2 1 (sup) 2	1	0	0
W 15 0	30	2	30
X 4 1 (sup) 4	1	3	0
AA		0	1
BB		3	1
Sardis			
Y 0 7	4	2	
Z 10 10	0	0	

Notes on above table.

Mental hospital. Foulbrood first discovered here. Bees were bought from A.

A, original apiary affected in Chilliwack through purchase of old hives in Vancouver. Colonies all strong. B's apiary is one-half mile west of A. Just a few affected cells. Prevailing winds were from the east all spring.

N's apiary originally contained a dozen colonies, but had dwindled to one. It was close to Flynn's apiary, which seems to be the point of origin of all the diseases in this part of Vancouver. On Flynn's death his apiary was dispersed. G, H, and K buying hives. I bought from H.

C, D, and E are near each other, but fully two and a half miles from the center of infection. E had had bees for some years, the others had just started. C bought from D.

O, P, and Q live close together. The last named bought an old hive from somebody, cannot say who, and probably introduced the disease into his locality.

F had the infection brought to him by D in a new hive-body that had been

used for a weak swarm for three weeks.

K bought 12 colonies of Flynn apiary. L adjoins K.

M bought six old hives from N, invested in half a dozen queens and started nuclei. Result, his apiary was entirely wiped out in two years.

R bought a single colony from somebody unknown who left town.

S loves bees, but thought his district was worthless for honey production, so he provided them with a home. He had hives and boxes stacked up like cordwood, three deep. From him I could not get any definite information, but he was just one mile from the center of infection. I found here the worst case I ever saw, every frame solid with dead brood and only a few bees alive, yet in the next two seasons the colonies that remained seemed to be perfectly healthy.

X bought from a man who left town. I learned that W had got part of the same apiary, and on proceeding to his place I found the disease far advanced in two out of his three purchases. The story of the hive is rather interesting. It was of the Gallup pattern, and when bought did not contain a single cell of brood or honey. W thought the conditions propitious for transferring to a regular hive so he shook the bees on to a set of his own combs and rendered the old ones into wax. Remember, he was not shaking for foulbrood, he was merely transferring to a standard hive. When I called on him a year later he felt confident the colony was clear of the disease, but I found one affected cell.

V was a beginner; he had bought a colony from some one leaving town.

Y and Z are located about two miles from the A apiary. How the disease got to them I could not trace, but A deals in supplies. The Z apiary is managed by a lady who disobeyed most of the elementary rules of good beekeeping. She would persist in feeding back most of the season's crop in the open air. Y ran her apiary in 1914, using some of his own extracting supers, taking them home to be cleaned up. The owner would not permit him to examine the brood-nests. Holding a demonstration at Y's apiary in the

spring of 1915, I was horrified to find nearly every colony in awful condition, as the year before the apiary was in fine shape. Everybody present at once cried out "The bee inspector brought the disease the year before." Luckily I was able to show by my notebook that I had had no contact with foulbrood until 14 days after my previous demonstration. Some folks give bee inspectors lots of blame and mighty little credit, if any.

D in 1915 bought a lot of bees in boxes from a man in the bush, and transferred them to regular hives. Most of his cases in 1916 were of this lot, so I started into the wilds to locate the seller, who is designated as AA in the table. I found he had kept bees for many years, but in 1914 he had got a colony that had come from the apiary of I.

BB bought a colony from G in 1913. Knowing its history I examined it twice in 1914, once in 1915, always finding it in good condition. In the spring of 1916 it had shrunk to a handful of bees, with disease in three combs.

The winter of 1915-16 was the most severe known to the oldest white inhabitants of British Columbia and wiped out at least 40 percent of the bees in the Province. Stores were drawn upon to the last cell, hence any dormant germs were given an opportunity to get in their deadly work.

Out of my whole experience I think I can draw a few definite conclusions.

1. It is not proven that the infection can be carried by queens, although at one time I was rather suspicious.
2. Free movement of hives in ordinary commerce is a quick and common way of spreading the disease.
3. Feeding back honey in the open air is very efficient for disseminating the germs of foulbrood.
4. It is a rather risky investment to buy up old hives and combs, yet I found one man who had invested \$600 in an apiary buying a couple of empty hives in a foulbrood district, even after I had warned him about the region. I burned them on the spot.
5. Disease germs will lurk in a hive for some time before affecting the brood. One of our inspectors had a

case develop three years after the colonies had entered the Province, having come from a foulbrood region in Oregon. The case of BB mentioned above seems to confirm this.

6. A new hive in contact with a weak swarm for only three weeks can carry the germs and develop the disease when used for another and strong swarm.

7. Using the most drastic measures we cannot expect to stamp out foulbrood in less than three seasons. In Vancouver I found 38 affected colonies in 1914, 21 in 1915, 9 in 1916; at Esson-dale 5 in 1914, 0 in 1915, and 1 in 1916; at Chilliwack 5 in 1914, 1 in 1915, 0 in 1916. All the new cases were very mild, just a few affected cells, so I am in hopes to soon have a clean bill of health.

8. The bee inspectors must not trust to the average beekeeper finding the disease in his own apiary; only four times in six seasons have I been called to examine suspicious cases. In two instances I found foulbrood, in the other two the brown pollen was the cause of the worry.

9. The foul smell said to be so characteristic of American foulbrood is not always present; in fact, I have never yet had a chance to become acquainted with it. Whenever I have found a case of the disease I have tried to get together as many of my people as possible, so that they might become familiar with its appearance. Several times I have had surrounding me as many as a score of both sexes, and even when the case was a very bad one all failed to detect any disagreeable, odor.

I think it is Cowan who says that another germ must be present to produce the smell, and that the non-smelling type of American foulbrood is not nearly so virulent as the stinking variety. The type in Vancouver has been there for at least four years, and if my Chilliwack informant was correct it has been present for nearly a score, yet with apiaries rather closely clustered I found comparatively few cases in proportion to the number of colonies examined, say three percent these being in 12 percent of the apiaries. The percentage of apiaries looks rather high, but the proportion is due to the scattering of the disease by sales from affected apiaries. With the educational movement started in 1911, beekeeping in British Columbia is expanding rapidly, the Department list of beekeepers now containing a total of about 1500 names.

Victoria, B. C.

A Beemoth Parasite

BY FRANK ROJINA.

DURING the month of August, 1916, several combs in our apiary were destroyed by moths. I laid some of these moth-infected frames aside for demonstration work and put them into one hive in the steam-heated storage room. The hive was covered with a bee-escape board. In December I noticed on the window pane behind this hive a large number of small flies (see the picture). I was wondering where they came from. During this investigation I opened the hive with moth frames and found the hive full.



Apiary of Sprott & Schow, Burnaby Lake, B. C., 40 colonies produced 3500 pounds of extracted honey in 1916

of these little flies, the frames covered with webs and the larvæ all dead.

I put one of the dead larvæ under the microscope and found on it many nests of tiny oblong pupæ near the legs of the larva. Investigating the refuse on the bottom of the hive, the flies seemed to be hatching and flying up whilst I looked. I then began to look through the mating nuclei which contained frames from last summer's queen-rearing, and found that a few of them which showed traces of the bee-moth also had a number of these flies present with larvæ all dead.

This fly belonging to the family of Hymenoptera, probably *Dibrachys clisiocampa* is a parasite which lays its eggs in the larva or pupa of the bee-moth, which after hatching feed on the larva and kill it.

In daytime these flies like the sunshine and come out on the windows by thousands. At night they return to the hives where small holes permit them to enter and lay their eggs.

The thought occurred to me that this matter might be investigated and these flies bred for distribution among beekeepers who are troubled with moths, as a means of destroying this pest.

University Farm, St. Paul, Minn.

Value of Sugar as Food for Bees

BY PH. J. BALDENSPERGER.

THE following article from the pen of our old friend Ph. J. Baldensperger, will interest our readers, concerning both the value of sugar as bee-food in times of dearth and the experience of a veteran in handling hundreds of colonies of bees in Syria and the Holy Land, a country similar in its honey resources to our arid southwestern States. Mr. Baldensperger who speaks and writes several languages fluently, is now located in southern France, at Nice.

On page 88, March, 1917, the question about "Cane vs. Beet Sugar" is discussed. This question has interested me in so far as I have been feeding sugar in years of dearth or simply as stimulative food for the past 37 years. When we began modern beekeeping in 1880, we had very nearly 30 years of experience with bees, in the old fashion, but then only did we begin to work really with bees in the frame hive. Jerusalem is a dry place, indeed; the old Canaanite name Jebus, is very similar to Yabes, the modern Arabic for dry or hard. When we really started, we went headlong into the business, and as beginners, did not wait for the right moment, which would best suit the bees, but we seized on the moment when it seized us. Our first expense was sugar. We made hives with old boards, as D. A. Jones, of Beeton, Canada, then in Jerusalem, showed us, and fed the bees as the same gentleman fed his bees to carry them with him to America.

In those days the hogshead of sugar was just disappearing, and was replaced by loaf sugar and sugar dust of the consistency of earth and small pebbles. Sugar was then taken with a spoon,

the pebbles and sugar dust used in the coffee or tea. The sugar sacks sold then, weighed about 180 pounds each, and the Arabic shepherd called an Attal, carried such a sack on his back from the shop inside the walls, to our school-house on Triori outside the walls, a little over a mile distant. Cars, wheelbarrows and the like were absolutely unknown; there were donkeys to carry heavy loads; but I think the shopkeepers who paid a strong man about a beshlik a day, which corresponds to about ten American cents, found human labor cheaper.

The sugar sack weighing about 180 pounds cost about 15 piasters the sottle, so the pound of sugar was worth about 10 cents. We did not know whether the sugar was cane or beet; all we knew was that it came from Marseilles. I began feeding the colonies with sugar, simply, because sugar was the only sweet to be found, though we lived in the "land flowing with milk and honey." The *dibs* of the Arabs and *dabsh* of the Hebrews was made of grape syrup boiled to such a consistency as to hinder fermentation for half a year, that is from October to March. Honey was no current article in the Jerusalem market, and that is why we used sugar. Bees developed very well on this food. We had heard

last century, was 6 degrees C. (43 degrees F.) in the early morning on a January day. There were a few almond trees in blossom, but they did not give sufficient honey to stimulate brood-rearing worth while. Pollen was to be had on daisies and the like. A German beekeeper living in the German colony north of Jaffa, often complained of this lack of flowers just before the enormous honey flow, and his bees were never ready in time, as he disliked to feed or shrink before the expense.

We usually fed the bees every evening from about Feb. 25 to March 25, or even to the beginning of April, pouring the prepared syrup into each hive, either by the flying hole or from the top. It took us hours to pour in the feed to several hundred hives daily. We were generally two at the same hive, one to handle the syrup, the other to smoke the bees. We began with not over one-sixth of a pound the first day, and for a week at the same rate, then increasing the portion until we reached a pound or more daily, as the colony showed progress. I have been told that sugar degenerated the bees, was a cause of foulbrood, and other nonsense, but I have continued feeding in time of need here in the Alps of southern France as well.

Well-fed bees, provided they had a



SMALL HYMENOPTERA THAT FEED UPON THE LARVÆ OF THE BEE-MOTH—(See the contribution by Mr. Roijna)

about artificial pollen, pea meal, flour, etc., and threw a little in or about the hives, but bees never troubled very much about this, and in all my later experience I used sugar, preferring it to honey, excepting when our own honey flow was so great that we found no ready market for it. Pollen was largely provided by nature everywhere when it was wanted.

When we began pastoral beekeeping, carrying the hives from Jerusalem to Jaffa, and *vice versa*, we usually fed the bees on large quantities of sugar, which often arrived at Jaffa after a tempestuous sea voyage, somewhat washed over by the salty waves. The merchants at that time offered us the damaged sugar at about half its usual price. The German shopbroker called it "Havari sugar," which we found later to be a corruption of the French "sucre avarié" (damaged sugar).

The orange blossoms suddenly burst into bloom about the beginning of April, and honey flowed in at the rate of 2 to 20 pounds a day per hive. We had to stimulate the bees, beginning the middle of February, as the climate of Jaffa is very moderate. The coldest day I registered in the eighties of the

vigorous mother and workers enough to pull the colony through five or six weeks of dearth to the doors of abundance, always largely paid for the expenses, and were as fierce as any beekeeper can imagine. As far as degeneration goes, the result of such degenerate bees by sugar feeding was an income of anything between 50 and 180 pounds per hive, with an average of about 120 pounds or over. The number of hives were often between 400 and 500. I heard a maitre in apiculture of our region criticize my observations because he thought I worked with one-half dozen hives on Sunday afternoons only, as he himself practiced his apiculture. As for sugar infusing foulbrood or preparing bees to receive it, my long experience in Palestine has shown me that foulbrood never appeared simply because the bacilli were not present.

Again, it was objected that the sugar would contribute to adulterate the honey, but those who tried to hit at that did not reflect that food is given to the bees to stimulate them when there is not a drop to be found, and how could the syrup consumed, not stored, affect the honey? Just before

the orange blossoms opened, the end of March, the colonies with 12 to 25 frames of brood, had not a drop of syrup, and they would have starved to death had not the orange blossoms been there.

As Jaffa was dry all summer, we carried the bees on camelback trains to the plain of Sharon and the mountains of Judah, stopping two or three times, for a few weeks at a time, at the principal honey resources. Cactus flowers, agnus cactus, lavender, and finally thyme, grow in succession from May to September. Feeding was therefore only necessary in February and March at Jaffa, and we always wintered our bees on pure honey. Many years later we learned that English beekeepers preferred cane sugar, and explained the absolute superiority of this sugar in the columns of the *British Bee Journal*.

I have used sugar since I lived in France, for many years, and have never

terval the bees completed the 13 combs.

From Aug. 13 to Sept. 11, I fed them $28\frac{1}{2}$ pounds, \$2.85. They built eight complete combs.

August 14 I took away nine complete frames, of which four contained bees, which I put into nuclei to rear queens.

August 27 I took four frames of brood for nucleus. September 11 I took four frames for nucleus. From Sept. 17 to Oct. 8 I fed them 7 pounds of sugar, 60 cents worth. They again built six complete frames of comb.

September 23 I took again from the old stock two frames of brood, and on Sept. 27 five more frames of brood for the nuclei, and from Oct. 9 to 10, I fed them $1\frac{1}{2}$ pounds of sugar, 15 cents.

October 13 I took again one frame of brood, and on the 19th three more frames. In all I fed $60\frac{1}{2}$ pounds of sugar, or \$5.80.

They went into winter quarters with

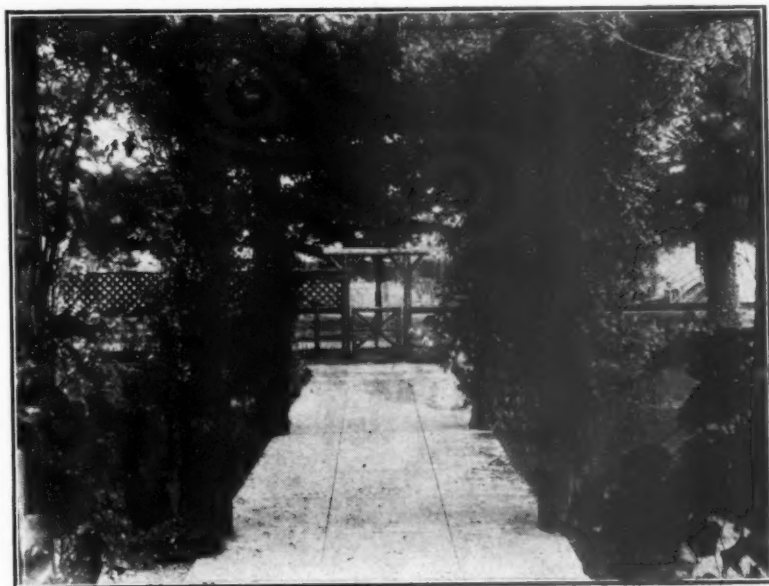
be cooped up, fenced in, tethered, nor hobbled.

And one particular neighbor is possessed by a fear of bees that even his abiding faith in the protection of the All-Wise can neither overcome nor allay. Not even his best friends can explain this fear. He is obsessed by it. He once had presented to him a hive of gentle Italian bees. They had never stung him, yet he could not be induced to approach them—not even to replace the hive cover that had blown off during a rain storm. The timely visit of a friend saved the colony from a watery grave, and the bees were immediately handed over to the rescuer by a grateful and greatly relieved owner as an appreciation of heroism.

My neighbor's garden is under the care of an expert, whose sole duty apparently is to provide pasturage for our bees, since he cultivates honey-producing flora to a greater extent than any other gardener within bee-range. My neighbor's home is on a beautiful eminence. My bees are situated in an out-apiary in the gulch just below, where they can mount, unburdened, and volplane back with their cargoes. As the season advanced, I became aware of the unhappy mental condition of my neighbor. No matter in what section of his garden he chose to take the morning air, my bees were there to welcome him; if he would sprinkle the lawn or water the shrubbery, there were the bees clustered on hose and faucet; or, if he would inhale the fragrance of the filbert bloom—a low tree that in February puts out catkins similar to those of the pussy willow—a startled bee would graze the tip of his nose.

Nor was the nuisance, like the gnat or the mosquito, confined to any particular season. My neighbor's shrubs and plants, which numbered into the thousands, had been gathered from all lands and climes, for the sole purpose of proving, to those of Missouri extraction, that anything will grow in California; and at all seasons, barring unfavorable weather, my bees, in true cosmopolitan fashion, were up and at my neighbor's nectar, both foreign and domestic—the wistaria from Japan, Americanized to "wisteria"; the catalpa from the East Indies; and the algaroba, which, although a native of the Mediterranean region, came to my neighbor's enclosure from Oahu, one of the Hawaiian Islands, a seed from a Paris garden having been planted there years ago by Father Batchelot, and which has developed into the same tree known in certain portions of our country as mesquite.

But even that is not all. If my neighbor essayed to reduce his waist line, by a turn at tennis, a bee would fly at him from each of the Cherokee roses that interlace the wire enclosing the court; or, in his daily pacing to and fro beneath the pergola, the humming of the bees gathering pollen from the passion vine blossoms overhead would disturb his lofty solitude; or, in the hammock, swinging just inside a hedge of cyprus proliferis, or Canary Island broom, a honey tree of great value, Lethe could neither be wooed nor won; and the rustic chair beneath the oak from whose glossy leaves my bees garner the honeydew, now appeals in vain to its erstwhile occupant. And what diabolical fancy could it be that caused



WHERE MY NEIGHBOR TAKES THE MORNING AIR

had occasion to test which kind is actually superior, simply I suppose because beet sugar is mostly produced in Europe, perhaps England excepted. France has its cane producing colonies which help it a little, but the greatest production is beet sugar all over our continent. When beet sugar fails in years of dearth, as in 1910-11, the smaller cane sugar productions of Cuba, etc., can not help to keep the prices at the general level in normal times.

Since the war our sugar factories have mostly been destroyed or in the hands of the enemy, being in the beet regions of northern France, and no wonder if we use cane sugar now. But we have just enough for human use, and the bees must wait until everything is in order again to receive their share, if they want any.

A few years ago I had a colony of bees in a shed right in the middle of the town of Nice, and as my bees were all at the mountains, I resolved to keep this one and feed it, if necessary, on sugar during the long and dry summer months. I gave the colony 13 frames containing only one-half starters.

From July 10 to Aug. 7, I fed them $23\frac{1}{2}$ pounds of sugar, \$2.20. In this in-

three small colonies which had two frames built full without foundation, and all with worker-cells. There was not a flower extant, some very rare pollen, gathered from gardens. So much for my experience with sugar and its effect on bees.

Nice, France.

My Neighbor's Garden

BY C. D. STUART.

BEEES are no respectors of persons. When raiding the possessions of my neighbors for nectar, the rich and exclusive are visited with the same assurance as are the work-a-day folk, and even more persistently, owing to the greater variety of flowers a special, high-priced gardener can produce over the few plants and shrubs a business man is able to keep alive by casual, after-office-hours sprinklings.

But the important consideration is not the familiar attitude assumed by my bees toward the neighbors, but the attitude my neighbors and I are able to maintain toward one another, despite the disturbing circumstance of my possessing live stock that can neither

the gardener to plant a locust tree at one entrance, and a New Zealand red gum, an equally attractive bee food, at the other? No doubt the carpenter bee, a black zeppelin-like creature, was the original cause of my bees falling into such disfavor, for so avidly did the wild creatures work on the locust bloom that my Italians were completely outnumbered, and the daily encounters of the two species only terrified my neighbor the more.

But we were unable to help him. He refused to learn bee language and govern himself thereby. For example, when the bees dart from flower to flower with loud impatient buzzings, one acquainted with the bee vocabulary would know that they fly away empty handed or, more properly speaking, with empty stomachs, to the hive again. Under those circumstances it is well to

psychology of these funny little people! If only I might be allowed to explain matters to him! But that is impossible. I never see him. Of late, the chauffeur drives him down the gulch road, whereupon he alights and ascends a winding stairway cut in the steep hillside and, protected from my bees by wildwoods, enters his home by a rear door, and barricades himself.

Queen Introduction

BY C. D. CHENEY.

THE recent review of queen introducing methods by Dr. Miller suggests an observation or two upon the two principles of present day methods. If all the methods named or known are analyzed, it will be found that by any method the bees' attention

is either *diverted* or *distracted*, and success depends upon how thoroughly this is accomplished.

We can estimate the ethics of the case only by comparing the effect upon the bees with our own emotions under similar conditions. When a salesman approaches a prospective customer he endeavors to be as agreeable, cheerful and sociable as can be in order to put his customer into the best humor possible for receiving what he has to offer. He watches carefully, and introduces his business only when he feels that his customer has been favorably impressed and is in the right humor to accept his proposition. This may be termed the "diversion" method of introducing—business, and is universally practiced. Can any one describe, or imagine, a distractive method which would stand a ghost of a chance?

Adhering to our comparison, why should the accepted human method be entirely ignored and reversed when we essay to deal with our bees which are infinitely more sensitive to external impressions?

This may be taken as an argument in favor of "diversion" methods for introducing queens, for which I think no apology is needed.

May I be permitted to add as my firm belief that the "Sousin" method, everything considered, is the best of the diversion methods.

New Jersey.

The Different Races

BY E. F. ATWATER.

WHEN we first located in Idaho, some 16 years ago, the bees for many miles in every direction were as pure Italians as can be found with very few exceptions, and this in spite of the fact that no attention had ever been paid to keeping them true to type. Certainly there had been no reversion to the black type, as often claimed by eastern beekeepers when the race is not constantly kept up by careful selection. No doubt such re-



A WISTERIA TRIMMED outhouse

be on guard, especially when they come straight at you, with ears laid back and teeth showing, as though you were to blame for their disappointment. It is then that inconspicuousness is the better part of valor.

On the other hand, when the sun is coaxing the nectar from the hearts of the flowers, the bees are too busy for quarreling. They come whizzing past, full of business and honey, with an important get-out-of-the-way quick humming, at once joyous and commanding, that no one dreams of questioning. All they ask is the undisputed right-of-way back to the hive-stands. But my neighbor does not seem to get their point of view. He takes the position which, if put in words, would be, "These are my premises. I got here first. I'm established. You can't drive me away!" and proceeds to prove his rights by dashing through the pergola to the house, coat tails straightening in his flight, and madly fanning the air with a tall silk hat, which exposes a spot at once vulnerable and convenient for attack. Naturally any bee with a sense of humor would give chase; and ours are jolly bees.

If only my neighbor understood the



MY APIARY IN THE GULCH BELOW

version in other localities is due to the presence of black drones in wild colonies, unsuspected by the beekeeper.

With a locality stocked with so good a race, no doubt some would question the wisdom of making any experiments with other races, but as our nights are cool, springs often rather unfavorable and altitude about 2700 feet, we began cautiously testing other races in 1903 and today, our 1000 colonies are nearly all of more or less Carniolan blood, which we have never regretted.

In the meantime, other races and crosses have been tested. Some ten years ago we had a tested Cyprio-Carniolan queen from Mr. Frank Benton, which certainly gave a fine colony of industrious bees not excessively cross. From her we reared a number of daughters, all of which mated with Italian drones. Some of them, in their markings, showed no trace of Carniolan blood, and all were very good in every way except that about one in ten produced bees which were very irritable and difficult to handle. The liability of the Cyprian temper cropping out caused us to discontinue breeding them.

In 1905 we had a very fine tested Cau-

casian queen from the United States Government. The bees were wonderfully gentle, but died the first winter, as stores were not of good quality, and the young bees produced by stimulative feeding late in the fall (the season being one of failure) were apparently tender. At various times we have had Caucasian queens from other breeders, but none has produced bees which were very gentle. The Caucasians and their crosses have been equal in prolificness, hardiness and industry to any, and are among the best bees for this locality, but not so far as tested superior to Carniolans, while their habit of closing the space just inside the entrance with a huge wall or curtain of propolis every fall is against them, as it is no small task to remove it so that frame manipulations may be quickly made. In the cut the propolis defenses may be seen, not only attaching the corners of the frames to each other, but extending back two or three inches between the bottom bars of the frames and in places attached to both the end and bottom-board of the hive. The hive-body shown was the lower story of the colony, and the colony only one-

half Caucasian blood.

Last, the least desirable of all races tested, the Banats. No bees ever tested have proved so inferior as storers. Only one of many Banat colonies ever made 100 pounds of comb honey, while many colonies of other races have far exceeded that amount. No bees ever bred up better or tried to swarm more, and as soon as a good flow begins they "plug" the brood-nest with honey worse than any Italian colony, and very effectually prevent the rearing of enough bees to gather a second flow.

We have found no trouble with the development of a so-called "mongrel" type of bees, and while some colonies are more excitable than others, yet practically all of perhaps every possible mixture and re-mixture of Carniolan and Italian blood have proved good as honey gatherers, hardy, prolific white cappers of comb honey, and little if any more liable to swarm than Italian colonies of like strength, and our locality is bad for swarming with any and all races, large hives or small even when producing extracted honey.

Meridian, Idaho.

Ventilation of Hives

BY I. HOPKINS.

I WAS more than interested in the article by your Swiss correspondent, Mr. H. Spuehler, on "Economy of Heat in the Hive" in your December number, more especially that part of the second paragraph referring to the size of the entrance to the hives recommended by Mr. Kramer, as the result of seemingly exhaustive experiments.

For the first few years of my bee-keeping career I was always troubled with moldy combs and soured food in the hives, with more or less diarrhea among the bees in early spring. The position of my apiary on a hillside was perfectly free from dampness, and the district itself did not register an abnormal rainfall, so that I began to think that moldy combs constituted a normal condition of bee-culture in frame hives. Subsequently, however, I thought that the need of better ventilation might have something to do with the question, as the practice then was to reduce the entrance to a very small opening in winter, while the bees at the same time blocked with propolis all means of upward ventilation. My friend, the late Rev. J. R. Madam, also, for similar reasons, became interested in the ventilation problem, and between us we concluded to carry out a series of experiments at my apiary.

Your correspondent suggests that Mr. Kramer, as far as he knew, was the first man to solve the question with thermometers 25 years ago. The first of our series of experiments which was conducted with the sole object of determining how to secure efficient ventilation of the hive, was commenced on Jan. 15, 1889 (see record in March number of the Australian Bee Journal, 1889), and continued through 13 series until April 10, 1889, all of which are recorded in the same Journal. This is exactly 28 years ago, three years before Mr. Kramer experimented. The greatest number of thermometers we used at one time I think was 17, and although we insulated them as far as possible



CAUCASIANS ARE PROPOLIZERS

Notice how they have plastered the front end of the frames so as to contract the entrance

from outside atmospheric influence, and endeavored to eliminate all errors so far as possible, we realized, as our final report indicated, that further investigation was needed before accepting the results of our experiments as final. They were conducted under different conditions, with porous mats over the frames, and the latter hermetically sealed to prevent the slightest upward ventilation, and with wide and contracted entrances.

There was one feature as the result of our investigation in which there could be no error, and that was, under all conditions, the indraft of fresh air and the expulsion of contaminated air was through the entrance, as absolutely proven in all our experiments by the difference in the temperature shown by two thermometers inserted within the hive, one at each side of the entrance. Since that time I have invariably kept a wide (large) entrance to hives containing normal colonies both in summer and winter, and never remember having a moldy comb, soured food, or bee diarrhea during the intervening period.

Other features in which there were few chances of mistake were, that in most cases the center of the hive was warmer than just beneath the mats, and frequently on the back part of the bottom-board the temperature was higher than in any other part of the hive. Mr. Kramer's conclusions regarding the advantages of a big entrance exactly fit ours.

Doctor Phillips' experiments as detailed in his Bulletin No. 93, are extremely interesting, but they have little or no practical application in this part of the world, where our bees are flying all the year around.

Auckland, New Zealand.

Five Minutes Among the Bees

BY R. L. RINCKWITZ.

"**B**EEES!" I exclaimed, with perhaps unnecessary vehemence, as I sat up in bed, and "Where?" exclaimed my wife, in an alarmed manner.

"In the upper story at present—in the garret," I answered, peevishly I admit, since it always annoyed me to have my flights of inspiration misinterpreted by my practical wife. But again she misunderstood.

"I knew a woman once who read that money could be made with bees in an attic," she said, dubiously, however.

"No! No!" I told her. "I merely used a slang term; I meant bees in my bonnet, in the upper story of my gray matter. Practical men always keep their bees in an apiary."

"What kind of an ape—er—what did you call it?" Adelaide now wanted to know, "What do you know about bees, anyway?"

Feeling somewhat as if I had received a foul blow under the belt or between the joints of my armor, I nevertheless gathered the remnants of that self-control, which is the pride of all male animals, and patiently explained, first waiting for the clock to finish striking twelve, though as I counted it seemed to continue to seventeen or eighteen. I also waited for three roosters to stop crowing, and explained that it was only a board falling over, due to wind in the woodshed, and not a burglar trying to

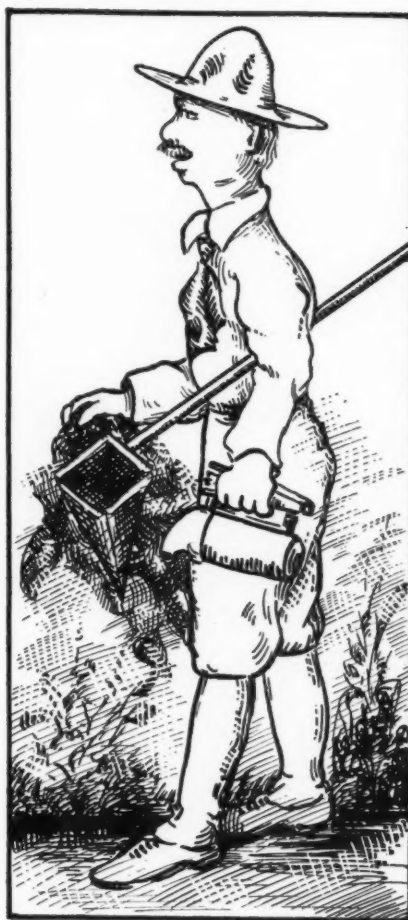
carry off the big grinstone or the hundred pound keg of nails.

"What do I know about bees?" I questioned testily, possibly a trifle haughtily. "I have been reading bee journals ever since yesterday morning. What I don't know about bees certainly wasn't written in any book or magazine."

"A bee is an insect with a crustaceous formation, and armed with a business-like antenna at one end, and a sting at the other—the latter is seldom or never used, however," I added hastily, to forestall objections in that locality. "Much depends upon the end or direction in which you approach a bee."

"But do bees always advance with the front or harmless end toward the ape—what was it you called the bee-keeper?"

"A-p-i-a-r-i-s-t—Apia-rist," I replied with a Job-like inflection. "Bees dwell



"WITH SMOKER, VEIL, AND SWARM BASKET I WENT GAILY FORTH TO MY DOOM."

in a hive in perfect peace and harmony, and without asking foolish questions, go about their duties of gathering propolis and nectar. They consist of a queen, drones, and workers; the latter are mostly imperfect females," I added maliciously.

Entirely ignoring my masterly attack, and with a cool exterior which I dreaded, since it generally heralded some base and underhanded sally—in the manner of advanced suffragism, when I least expected it, my wife now wanted to know, "What is a drone, and what are they good for?"

"What is a drone good for? You, with your education, still ask such a question?" I parleyed, to gain time. "Why drones—*drones* are good for feeding chickens. They—"

"Well, I am glad that they attend to something—you usually ask me to feed them." This from the wife of my bosom—but what can a man expect in this age of enlightened feminism.

"I mean they are sometimes fed to poultry when in the brood form, in the more tender years of their growth; but time spent in the hive soon falls heavily upon them, and before they reach that mature stage of what with us is known as the voting age, in the flavor of their youth and innocence, they are literally worried to death by the females." (This was not just as I had read it, but I thought it would do, since it was so near the truth.)

"Yes, I shall surely get a bee—rather a pair of them," I went on hurriedly, to head off any more questions. "Come to think of it, I shall get several pairs, perhaps half a dozen couples." I hate a piker, always preferring to do the thing in style; but my wife views these reckless and expensive moods with alarm, and this was no exception.

"I should think one pair would do," she told me, severely, "until you learn to feed them and water them properly. Better yet, why not write to Mr. O. O. Poppleton, the man whom you so often wrote up in the Metropolis of the Florida Bee King. I am sure he would tell you all about it in one or two letters."

Oscar O. Poppleton, a real personage who carried out the scheme of moving bees by water successfully northward, so as to get the successive blooms, I had known well in Miami, Fla., one of the largest winter resorts in the United States, and south of Palm Beach.

His plan, which consisted of moving the hives by means of a large launch from key to key, sometimes from as far south as Cuba to the vicinity of Stuart, Fla., had been tried once by a syndicate on the Mississippi, where it failed, according to Mr. Poppleton, because the hives were left on the boat, a method said to have been employed with good results by the early Egyptians. In the former case the bees were lost in the water by the thousands, though some state that the constant dwindling of stock was due to lack of knowledge and good management.

To the Bee King, as I had termed him in innumerable write-ups, I accordingly wrote, for I certainly had acquired a "bee in my bonnet" since malaria drove me from the semi-tropics and newspaper work into the valleys and mountains. That there was money in bees I vaguely knew, from observation, though I scarcely hoped to emulate Poppleton's scheme and "do what I cannot accomplish", as the late Grover Cleveland once said to the former while on a fishing trip at Stuart—"make the busy insects work the year around."

The reply was a long one, but the following extract is the gist of it:

"—the questions you ask are the usual ones a beginner must have answered, but it is impossible for any one person to do this nearly as well as a good text book. . . . A beginner in, say arithmetic, doesn't want to begin his studies with compound numbers instead of numeration, and on the same principle you want to begin your bee

education by first getting grounded in the physiology of the bee. It would be an enormous task for me to do this..."

"The hives I use are not made or sold by any dealer; I have to make them myself and do not think it would be practical for you to make them—better use the dovetailed Langstroth style of hive sold by the dealers."

"Don't go into this or any other expert business too largely at first. Bees can be bought from any dealer. Don't start with more than from three to six hives, and increase in proportion as your knowledge increases....."

A neighbor informed me that bees can be bought by the pound, and advised getting none but fertile, tested queens. Many of my questions were answered by him, but those I forgot to ask were legion. What kind of hive to use? Vaguely I know that Poppleton's hive, as written up by the Roots years ago, was radical, being one story and long, like a carpenter's tool chest, to facilitate its removal to and from the launch, piling in tiers, and to obviate the building of "brace comb", as the odds and ends of comb built by the bees between the first story or brood-chamber, and super or second storage chamber, are known. And, most important of all—a question I learn which has troubled beginners since time began—how to get the bees into the hive and how to keep them there? Wild thoughts of using chloroform haunted me, pending the arrival of some text books I had sent for. I thought bees, dreamed bees, and had bees in my mind as I ate whatever was put before me.

"Please get me some bed ticking like the last," said my wife one day as I started for town, "three yards of it, a set of darning needles, and the groceries in this list.....And don't let him give you common brown sugar this time—we are entirely out of it, and I must have the white!"

"Bed ticking, three yards, darning needles, and sugar, only the white," I unconsciously repeated between the perfunctory or choleric "Get up, Dolly's!" and "What are you doing there's!" on the way in. What I got, by some subconscious trick of the mind, was insect powder, and fly paper. To the grocer I had said—I shudder yet as I think of it—

"I want three pounds of bees and a fertile queen. Give me nothing but the white, please—the last I got were brown, and I know I said white." What the man said didn't amount to much—it was what he *thought* and *looked*. But I came home in triumph with white sugar.

"Some day," I said to my wife in a burst of patronage and confidence, "I may write a book, 'Three Years Among the Bees.' Langstroth's hobby was ants for many years—it was only through seeing honey in the comb on a friend's table that he was led to purchase some bees and make a study of them. They all write about them—Dr. C. C. Miller 'wrote 'A Year Among the Bees', Quinby wrote a book, Root wrote a book, Cook wrote a—"

"That's it, you forgot to get me that cook book I sent you over for yesterday," interjected my wife severely. Guiltily I thought of the bee book I had borrowed at the neighbor's instead, and said nothing.

My first hive came at last. I had sent for one minus bees and plus the

fixtures, smoker, etc., in order that I might study them better. Then came the day—it will retain its vernal freshness in my mind as long as I live—I remember it for the first thrill, and all the little and big thrills that came after.

"Mother says you know about bees", said a small boy at the kitchen door. "There's a bunch hanging on the wash line, and she says come and get them and you can have 'em."

"So already my reputation as a skilled apiarist has spread among the neighbors," I exulted, visions of that book to be written flitting as industriously through the nooks in my cranium as a bee flits from flower to flower.

With smoker in my left hand, swarm basket under an arm, bee veil in my right hand—and directions concealed in my pocket, I strode gaily forth to my doom.

"Don't let them sting you—aren't you afraid of them? Don't you use gloves? Are they glad to see you want to put them in a nice new hive? I believe



"MY HEAD IS LARGER THAN ITS WONT, SO THAT EVEN THE DOG STARES IN BRISTLING WONDER."

they are glad—hear them hum!" were a few of the questions hurled at me.

"A beekeeper never uses gloves," I replied less gaily, perhaps with a trifle of weariness in my tone. "Bees are always full of honey when they swarm, and in that condition *never* sting!"

Who wrote that last phrase? Ordinary killing with a club, fists or poisonous gas would be too refined for him. Those bees *were* glad to see me. Perhaps they mistook the veil I wore for a crown, hence decided that I was the queen. To see the haste with which they forsook that plain hemp clothes line for me was flattering—at first. Did they merely desire to embrace me? Wildly, and with a sinking feeling clutching me about the pit of the stomach, I hoped so. Vain, hollow bauble is hope in this cruel world.

"Stung!" Literally and figuratively I was stung. Four quarts of fond, loving and affectionate bees fell, by some perverse process, into a fold of my bee-veil, inside of it, and refused to be dis-

lodged from that haven. A pint of bees dropped into each sleeve; adventure-some and shameless hussies crawled up my pants leg, due to the sudden loosening of a refractory leggin, causing me to shed bitter tears of humiliation and outraged modesty.

Cheerfully would I have disrobed, there before Mrs. L's kitchen, only the commiserating matron insisted on standing there, just back of the screen door, telling me just what to do. Vaguely, as one hears joyful picnickers in a passing boat, through the murmuring, roaring surf, while bathing, I heard neighbors, female neighbors, big ones, middling, frying sized girls in the giggling stage, wild-eyed youngsters in skirts, skirted tots, millions of omnipresent small boys. And not a knot hole big enough for me to crawl into.

The bees were enjoying themselves meanwhile—or did my antics annoy them? Some broke their stingers off in my skin, and seemed desirous of retrieving them. Others got them in, and in some way could not withdraw them, which caused a wild, twisting, boring motion, like a man having teeth all over his head and body, and all being filled at once, only much worse.

What happened in the next five minutes—Mrs. L. insists it was only five minutes, though to me it seems a long summer's day and an arctic night for good measure—I know not. Perhaps I hit my head mercifully against the cellar door (Mrs. L. says I fainted, but I know better).

When I came to I was in the L's cellar, my head on the soft side of a brick, and Mrs. L. was bending over me, with a greasy dish pan, empty, in her left hand. (The water it had held was mostly down my neck and over my clothes.) Her right hand was engaged in bathing my fevered and swollen brow with the dish rag, with what my wife, who unluckily chanced to come at that moment, insists was a caressing motion.

As a consequence, there is a coolness between my wife and Mrs. L., in spite of the hot weather, and they don't speak to each other. Possibly I might explain, but my lips are sealed—they are so swollen that I cannot speak to either. My head, also, is larger than its usual wont, resembling that of a rather distinguished ex-president to such an extent that even the dog stares in bristling wonder—as a consequence I proudly avert my head as I pass the neighbors, and fail to see them, for, owing to the swelling, I couldn't see any one if I tried.

Glendale, Ariz.

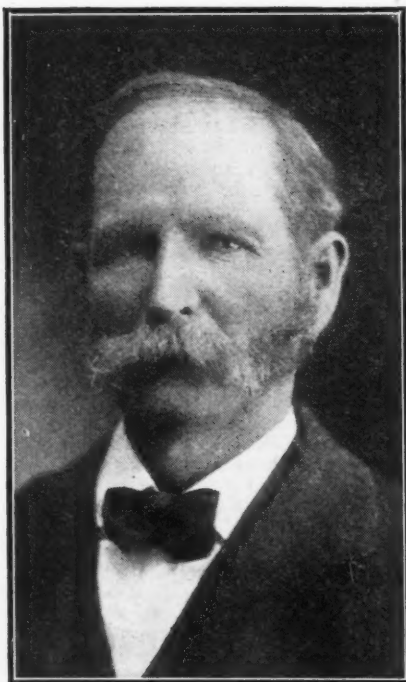
No. 6.—Seventy Years of Bee-keeping

IN our last issue we gave a list of the present periodical publications on bees in the United States. This list was prepared before the opening of the year. Since Jan. 1 another periodical has appeared which is worthy of mention. It is entitled "The Beekeepers' Item," and is published at New Braunfels, Tex. The vast State of Texas has entirely different beekeeping conditions from the other States of the Union, and therefore needs a special periodical. This need has made itself felt so often that already at least three publications made the attempt without

success. We hope the present publication may succeed.

The following is an incomplete list of the different bee periodicals which have been born in the United States in the past 50 years, and have been compelled to suspend their publication after one issue or more. Some have lasted over ten years. We possess at least one number of nearly every one of the following:

- 1866. The American Bee Gazette merged into the American Bee Journal, New York, N. Y.
- 1868. The Illustrated Bee Journal, Indianapolis, Ind.
- 1869. Annals of Bee Culture, Hawesville, Ky.
- 1869. The Beekeepers' Journal, New York, N. Y.
- 1871. The National Bee Journal, Des Moines, Iowa.
- 1872. The North American Bee Jour-



H. T. HAGLER, OF VIRDEN, ILL.

nal, Indianapolis, Ind. Successor to the Illustrated Bee Journal.

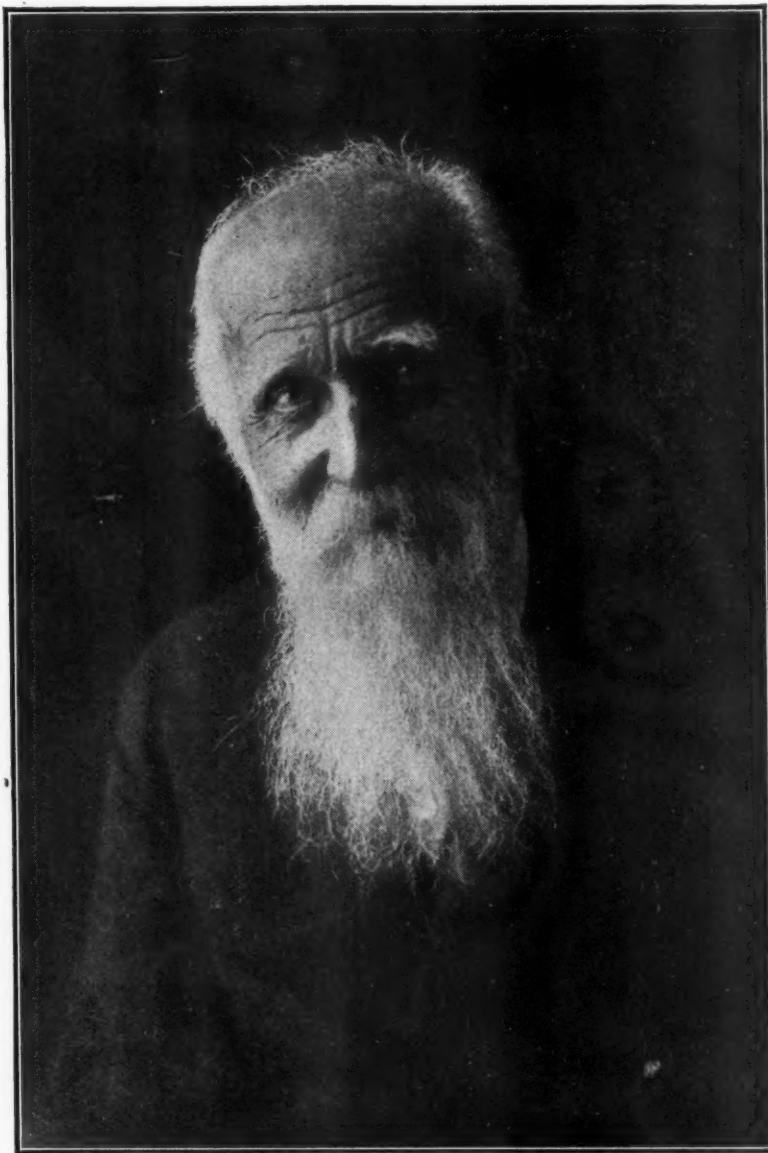
- 1873. Moon's Bee World, Rome, Ga.
- 1873. The Beekeepers' Magazine, New York, N. Y. Successor to the Beekeepers' Journal.
- 1877. The Indiana Beekeepers' Magazine, Logansport, Ind.
- 1877. The Beekeepers' Guide, Kendallville, Ind.
- 1879. The Beekeepers' Instructor, Somerset, Ky. Later at Adelphi, Ohio.
- 1879. The Beekeepers' Exchange, Canajoharie, N. Y.
- 1879. Our Apiary, Shelbyville, Ill.
- 1879. The Western Honey Bee, Lebanon, Mo.
- 1881. The Kansas Beekeeper, Columbus, Kan.
- 1882. The American Apiculturist, Wenham, Mass.
- 1882. The California Apiculturist, Oakland, Calif.
- 1883. The New England Apiarian, Mechanic Falls, Maine.
- 1885. The Gleaner, Dalton, Pa.

- 1885. The Texas Bee Journal, Waco, Tex.
- 1886. The Beekeepers' Index, Ovid, Mich.
- 1886. The Bee Hive, Andover, Conn.
- 1886. Rays of Light, North Manchester, Ind.
- 1886. Modern Farmer and Busy Bee, St. Joseph, Mo.
- 1883. The Western Beekeeper, Des Moines, Iowa.
- 1888. The Queen Breeders' Journal, Marlboro, Mass.
- 1889. The Beekeepers' Advance, Mechanic Falls, Maine.
- 1891. The American Beekeeper, Jamestown, N. Y.
- 1891. The White Mountain Apiarist, Berlin Falls, N. H.
- 1891. The California Beekeeper, San Francisco, Calif.
- 1891. The Bee World, Waynesburg, Pa.
- 1891. The Missouri Beekeeper. Sold to the American Beekeeper.
- 1892. The Progressive Beekeeper, Higginsville, Mo.
- 1892. The National Bee Gazette, St. Louis, Mo.

- 1892. The Poultry and Bee Journal, Auburn, Neb.
- 1893. The Beekeepers' Enterprise, New Haven, Conn.
- 1893. Success in Bee Culture.
- 1893. The Nebraska Bee Journal, Fairbury, Neb.
- 1894. The Beekeepers' Quarterly, Dowagiac, Mich.
- 1895. The Pacific Slope Bee Journal, Los Angeles, Calif.
- 1896. The Southland Queen, Beeville, Tex.
- 1901. The Rocky Mountain Bee Journal, Boulder, Colo.
- 1902. The Lone Star Apiarist, Floresville, Tex.
- 1904. The Rural Beekeeper, River Falls, Wis.

The short life of most of the above 43 publications has nevertheless helped progress, by calling attention to the cultivation of the bee.

Colleges have at different times taken interest in beekeeping. The first we know of to give a course of beekeeping was the Michigan State Agricultural College of Lansing. This was

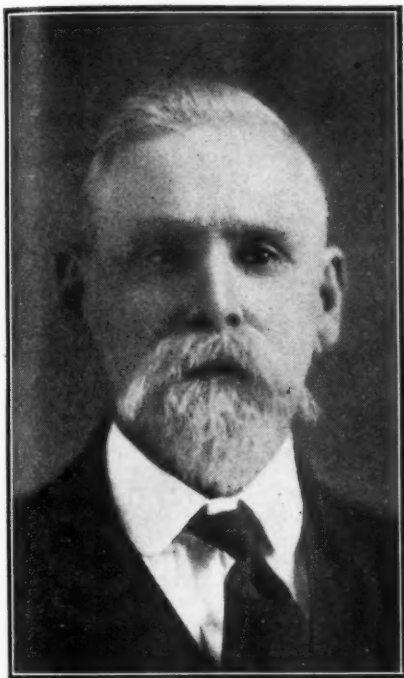


THE VETERAN O. O. POPPLETON, FOR YEARS A BEEKEEPER WITH LONG IDEA HIVES

due to the presence there at that time of Prof. A. J. Cook, already mentioned in these essays. At the present day nearly every agricultural college in the United States is either giving or contemplating a course in beekeeping. Capable instructors are at work in 20 or more different State institutions.

A year or more ago we asked for the names of those of our subscribers now living who have been readers and contributors of the American Bee Journal for 30 years or more. The number of replies is limited. But the list is interesting, and we think its place is properly at the end of this series of reminiscences.

56 years. One living man only has



ANOTHER OLD SUBSCRIBER AND CONTRIBUTOR, J. M. DAVIS, THE TENNESSEE QUEEN BREEDER

been a reader and contributor of the American Bee Journal since its establishment in 1861, and his name is M. M. Baldrige, of St. Charles, Ill. Mr. Baldrige was born in 1838, and is therefore 79 years old. He visited S. B. Parsons, at Flushing, Long Island, at the time when the first Italian bees were imported from Europe. He met Mr. Quinby and Mr. Langstroth, and was also present at the first National Beekeepers' convention in 1870 at Indianapolis, Ind.

51 years. After its first year, 1861, the American Bee Journal was suspended until 1866. At that time the following persons now living became subscribers and contributors of it:

Dr. G. Bohrer (84) and his wife (88), now of Chase, Kan., but at that time of Indiana. Dr. Bohrer was also a member of the first National Beekeepers' Association. Mrs. Bohrer is a bee lover also.

E. Kretchmer, of Council Bluffs, Iowa, mentioned in these reminiscences, on page 89 of our March number, was also one of the early writers and contributors of that date.

A. I. Root, the well-known publisher

and writer on bees, began his interesting writings at that time and wrote under the *nom de plume* of "Novice." His articles in the Bee Journal were much appreciated. He is now 77 years old.

A. J. Fisher, of East Liverpool, Ohio, claims to be the youngest of the early readers of the American Bee Journal, and the.....best looking. Ladies, what do you say? He says his wife won't be jealous if you think he looks young. He is only 69, and that photograph was taken on his birthday. He would like to see the National convention meet again in Cleveland, where it met 46 years ago. He was there.

48 years. Our faithful young-old man, Dr. C. C. Miller, has been with the American Bee Journal since the early days of 1870. We won't tell how old he is. Just read his answers to questions if you want to know.

The old veteran Doolittle comes just



A. J. FISHER, EAST LIVERPOOL, OHIO

after Dr. Miller. He has been also a contributor of all the bee periodicals, and he is only 71.

46 years. J. M. Davis, of Tennessee, one of the reliable queen-breeders, has read the American Bee Journal since 1871.

So has W. D. Wright, the noted beekeeper of National reputation, at whose home was held the Eastern New York meeting which the Editor attended last August, mentioned on page 15 of our January issue.

45 years. O. O. Poppleton, of Stuart, Fla., was 74 years old in June, and has kept bees since 1869. Look at that face! Don't you think an editor should be proud of counting such men of brains among his readers? His handwriting is as firm as ever. He is a veteran of the Civil War.

44 years. L. E. Day, of Clinton Falls, Minn., a veteran apiarist, was unable to send us his photograph owing to sickness. We hope he may regain his health soon. He is 80 years old.

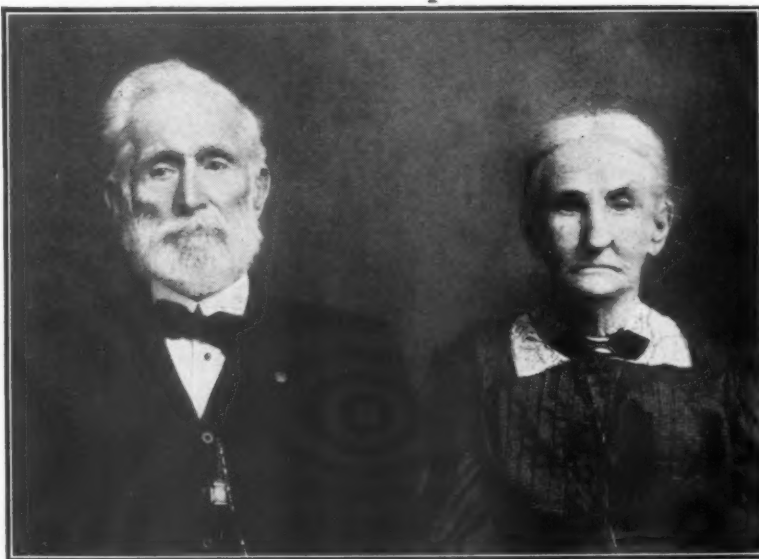
40 years. H. T. Hagler, of Virden, Ill., 70 years old, has read the Bee Journal for 40 years, and is still a faithful reader.

38 years. Dr. L. H. Pammel, Professor of Botany in the Agricultural College of Ames, Iowa. In 1879 he was a young man asking questions on botany. He is now a professor, able to give advice and to correct the errors of the teachers of that time. He wrote on botany then and is again giving us the result of his experience of a lifetime.

37 years. Eugene Secor, whose fine features ornament the cover of our May number, has been a leading beekeeper and has held some of the principal positions in the National association, being at one time General Manager and at another President of that institution. He says he is "afraid of the young men because 'tis the young fellows who run things now." But the young fellows cannot run things without the occasional advice of such men as he.

34 years. L. B. Smith, of Llano, Tex.; Henry Stark, of Nunica, Mich.; J. L. Strong, of Clarinda, Iowa, have all made a specialty of beekeeping.

33 years. R. Lowey, Woodrows, Ont.



DR. G. BOHRER AND WIFE OF KANSAS

31 years. A. F. Brown, Jacksonville, Fla.

Let me close this series of reminiscences by wishing to each of my readers that he or she may remain a constant reader of the "Old Reliable" for 50 years to come.

Perfect Combs

BY D. M. MACDONALD.

ONE of the most valuable assets in an apiary is a complete set of perfectly built combs. It is grand to possess ten combs, flat as a board, in every hive. Let every cell in all these combs be worker-cells. There should be no thick and thin parts, no twists and waves in any single comb. Every one should be perfectly interchangeable. When a comb is laid flat on the work bench, it should show no heights and hollows, no long deep cells and no short shallow ones. All should approximate the natural depth of a cell. There should be no transition cells, all should be of a true hexagonal form. All of us should have an ideally perfect comb to work up to, and all failing to

snaps, thus causing serious defects to arise.

The heat of the hive is at times excessive, the weight of bees may be too heavy, the wiring may prove defective, the sheet may be badly fixed, the quality of the wax may be uncertain—all these and many more points may affect the degree of perfection attained by the bees. A craze may seize the workers in favor of securing some drone-cells, also the weather conditions may lead to defective building, while the nature of the flow may prejudicially affect it. The quicker the brood-nest is constructed the better. A poor flow leads to loitering and scamped work. While the degree of perfection may thus depend on the weather, the flow or the bees, the beekeeper himself in nine cases out of ten is the chief transgressor; perhaps more frequently from want of thought or want of knowledge than from any desire to neglect his work. Foundation as now manufactured is so nearly perfect, frames, wiring outfits, and systems of fixing have reached so high a degree of excellence that, when rightly manipulated, almost all defects have been well-nigh eliminated, but in spite of all this, defective

combs will obtrude themselves.

Avoid drone-comb. Not only is their presence in the hive not anything like an asset, but they are encumbrances, nuisances, and even a detriment when working for honey. Drones not only fail to provide in any way for their own support, but are a heavy drain on the stores laboriously collected by the workers. In general, foundation all-worker-cell base eliminates them. Even when starters are used in frames when hiving swarms, if the space is contracted, only six frames being provided for a time, drone-comb can be hindered. Practically, the first ten days after hiving, bees construct only worker-comb, and, if there is a good flow on, the above number of combs should be fully constructed in that time.

During a second period of ten days bees readily build drone-comb, but this can be avoided by giving frames with full sheets of foundation to complete the number desired. In this case place the latter frames not outside towards the hive sides, but near the center, between the flattest faced combs available. When renewing combs in any established colony, full sheeted frames should always be supplied, as otherwise bees would invariably build only drone-comb. Age alone is no true criterion by which to gauge the value of combs. Some may last double the time others may. It is generally advisable to renew a certain percentage of the works after some years' use. This should be done systematically and on a set principle.

A good plan is to shift all defective combs to the right side of the brood next to the dummy. Then during spring cleaning, when they have been cleared of honey, they can be withdrawn and run down into wax. To renew them, and make certain they will be replaced by combs well and truly built, requires enlightened care. The best place to have them drawn out is in a super during a full honey flow. Almost every cell will be worker size, and the combs will be flat as a board all over the surface. The next best place is in a rather weak colony possessed of just so many bees that they can be induced to build. A fairly strong nucleus may be a good substitute. In both cases the work is almost



Apiary of J. B. Holsinger, of Johnstown, Pa., packed in winter cases

approach this ideal should be rigorously discarded.

The beekeeper has it largely in his own hands to secure this high point of perfection. An irregularly placed hive tends to create irregular building; therefore, hives into which swarms are run should be laid down with their stands on a dead level. This small item is worth attention. Every frame should be nailed up with every angle a right angle. Then they should be hung truly perpendicular. They must be very accurately spaced at $1\frac{1}{2}$ inches, or better, 1 9-20 inches. It goes without saying, that when worker-cells are desired, full sheets of foundation, embossed with worker-cell bases, should be used. It is often presumed that under normal circumstance, well-nigh 100 percent should be obtained, but this is a fallacy, as experience teaches us that rarely is such perfection attained. Brood foundation can so easily be affected by extremes of heat or cold that it readily buckles, stretches, twists, or at times



Apiary of J. B. Holsinger on July 4, 1916. What a difference between the summer and winter view of the same apiary

invariably well finished off. As a rule, however, these combs are constructed in the brood-nest. Many slip in a frame with a full sheet anywhere and anyhow, with the result that the comb is thick here and thin there, and the whole surface generally uneven. This need not necessarily follow the building of combs in the brood body. Choose two combs nice and even in the very center, the inward faces all a mass of sealed brood. Insert the frame there, and you will in general be delighted with the resultant comb.

Repairing combs may be undertaken in spring with good results. Bees may have been busy all day when weather permits, carrying in pollen and perhaps dribbles of nectar from early fruit bloom. At night they seem to have a natural crave for building and repairing any defects in the brood-nest. They should be encouraged in this laudable purpose. If defects are not so bad as in the last category, where frames had to be withdrawn, it pays to have faults remedied. And this the bees will carry out, making old combs look almost as good as new. Combs with a lot of dry hard pollen in a good many cells may have the walls cut down close to the midrib, and during the night the bees will build them up perfectly.

Other combs containing patches of drone-cells may have these parts cut out, and a piece of worker foundation or worker-comb can be neatly fitted into each vacancy when the workers will fit in the whole firmly and securely, and so neatly that one can scarcely detect the joinings. The same may be done with corners of comb showing mildew or mold. The defective parts may be cut out as squares or triangles, but a handier plan is to use a circular tin lid. With a sharp edge this cuts out the comb neatly. A similar piece gotten from reserve worker-comb can be fitted in securely. Place the frame in a strong hive at night, and in the morning you will scarcely detect where the patch has been fixed, as the bees have repaired it so neatly.

Langstroth said: "Good straight

worker-combs, not too old, are the most valuable capital of the apiarist. To the bees they are like cash capital to a business man." It pays, therefore, to use all diligence and care to preserve combs well and truly built. The bees are undoubtedly the best caretakers of comb, and, while under their charge, little evil can befall it. Surplus combs and those lying over for next season's extracting are in a different category, and require to be passed periodically under the scrutinizing eyes of the beekeeper. Damp, mildew, mice, and moths are their worst enemies. A nice dry room will hinder any development of the first two evils if the combs have been thoroughly cleaned up by the bees in early autumn.

Wage a constant war against the mice. A very ancient writer advised "cats, traps, and henbane" as a "sovereign remedie" against them. Fumigation with sulphur fumes or with bisulphate of carbon, should prove thoroughly operative in destroying moths in all stages, but combs should undergo the process periodically in order to insure that any merely scotched in the one operation may be thoroughly killed in the succeeding one.

Scotland.

Legal Service Department

CONDUCTED BY FRANK C. PELLETT,
ATLANTIC, IOWA.

"You will note by the enclosed clipping that the Board of Health of the town in which I live has passed a ruling aimed solely at myself. While no action has yet been taken their finding will probably be that my apiary is inhabited by ferocious bees. Will you please tell me to whom I can appeal in the state for an equitable ruling." The clipping reads as follows:

"Honeybees were brought under the jurisdiction of the city Board of Health at a special meeting last night. Hereafter like autos and dogs they must be licensed.

The Board of Health claiming sole

jurisdiction passed a new ordinance last night which provides 'No person shall keep in any part of the city any hive of honeybees except by permission of the Board of Health, which permission shall specify the number and location of the hives.'" NEW YORK.

Here is certainly something new. We have long been familiar with the efforts of town councils to undertake to prohibit the keeping of bees within the limits of the town or to require that they be licensed in some states. For the Board of Health to claim jurisdiction is certainly unusual to say the least. Boards of Health are, as a rule, clothed with very arbitrary powers. In just what manner they determined that the keeping of bees comes within their exclusive jurisdiction is hard to guess. It is unheard of that bees should be considered an agency in the spread of infectious or contagious diseases among the human race. As a general rule, a Board of Health cannot enforce rules for the keeping of animals except in emergencies, such as an epidemic of rabies or something similar.

Our correspondent has not given sufficient information to enable us to give a reply of much value in his particular case. As far as the newspaper clipping goes the board has not prohibited the keeping of bees or provided any penalty, but only required a permit. It may be that they can lawfully go that far whatever their object may be.

Our correspondent should consult a local lawyer in the event the board refuses to issue a permit. Even though he disregarded the rule it is hardly probable that they will attempt to destroy the bees since they are property of considerable value, and they would find it very difficult to show that the public health was endangered by their presence. In many cases such rules have been passed in the spirit of bluff, and when no attention has been paid to them nothing has come of the matter. It is probable, however, that in case of this kind they might cause the violator's arrest under some general ordinance assessing a penalty for failure to observe the rules of the board.

NOTE.—Questions intended for this department should give all possible facts bearing on the matter at issue, as laws differ so widely in different States that it is difficult to give a satisfactory answer unless the case is stated very fully.

Bear in mind that "more flies are caught with honey than with vinegar." So in your intercourse with your neighbors, be as kindly as possible and avoid friction. Have no recourse to law if you can possibly help it.

Flying Zones for Bees

BY W. H. MCWILLIAMS.

DO bees have flying zones in which to work, the older bees going the farthest, and the younger ones working nearer to the hive? I have proven to my own satisfaction that they do.

For years I have been a chronic bee hunter, and oft times start with bees in my decoy box which are from three to five miles from home. In such instances all the bees working on the bait are old ones; they are shiny, and



PRACTICAL DEMONSTRATION IS THE KEY FOR MAKING GOOD BEE-KEEPERS, AND IT IS ALSO THE BEST WAY TO FIGHT BROOD DISEASES

their wings are many times frayed. As long as I remain at this distance from the tree, these old bees come in increasing numbers, but as I advance towards the tree the bait begins to draw the younger bees.

At a distance of half a mile from their home, very young bees are decoyed, downy, fuzzy fellows foolish and playful in their actions. They run over the box and down the sides, and many times light on my clothing or on the

leaves near by.

When such bees are attracted I may be very sure that the bee tree is a very good one, because it will have brood probably in all stages and a good working force. On the other hand, if only old bees are drawn even when in close proximity to the tree, I may be very sure that the bees are either a fresh swarm hanging on the limb or domiciled in a tree, or else that they are rather weak and queenless.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

A Beginner

I have eleven stands of bees in single-wall standard eight-frame hives. Only three of them had the brood frames filled with foundation and wired. On account of lack of funds my order for supplies was late—as late as this letter of inquiry to you—but I will have ten frame standard hives which I know how to assemble. By the time your answer comes will it be too late to transfer the bees from the oldest hives into the new ones? Would not that be the best thing to do? If I find them full of moths what shall I do? How can one detect the presence of moth before they hatch? I understand that if the colonies are strong there will be no moths.

The original start of these eleven stands was a stray swarm. Last summer we got another stray swarm. I do not know what kind they are but I think not all the same. I know their disposition is not the same. I think none of them are Italian. When and how could Italian queens be introduced?

Bee stings make me very ill yet I am not afraid of bees. What does dead young bees before a hive indicate?

Hastings, Ill.

NELLIE GRAY.

The case is by no means hopeless, and fortunately there is time enough to get things in better shape. In the eight hives where there was no foundation, it's a safe guess that the combs are built in all directions, so that it is the same as if the bees were in box-hives.

Formerly the favorite time for transferring was in fruit-bloom, but nowadays the tendency is to wait until the bees swarm. When they swarm, hive them in the new hive furnished with foundation, set it on the old stand, and set the old hive close beside it. If now they are left to themselves a second swarm is likely to issue in perhaps eight days. This second swarm may be hived in a new hive and set in place of the old one, the old one being set beside it. Then 21 days from the time the first swarm issued, when all the worker-brood will have emerged, you can break up the old hive, add the bees to one of the swarms, and melt up the combs.

When the bees are in a common box-hive, you can chop the hive to pieces, but in this case you want to

save the hive and the frames. Turn the hive upside down (of course you will use smoke to keep the bees in subjection,) and with a hand saw saw down close to the wood on each side, and also at each end if the combs are attached at the ends of the hive. Now, holding down on the frames, you can lift off the hive, when the combs will be at your disposal.

It may be, however, that you do not want to have the second swarm, preferring to keep the whole force of the colony together. In that case, instead of waiting for the second swarm, you will, a week after the first swarm issues, move the old hive to the other side of the swarm, or, still better, set it on top of the swarm. That will throw the field force into the swarm, weakening the old colony so that it will not swarm again. Then 21 days after swarming you can break up the old hive as before directed.

With regard to moths, it is not likely a great many are present unless some colony is very weak. At any rate there is nothing you can do until the bees are in frame-hives, and then there will be nothing to do.

The first indication of the presence of the larvae of the moth will be the silken galleries made by them on the surface of the sealed brood. You are right; a strong colony will keep the moth at bay, and Italians are very much better in that respect than blacks or hybrids.

Perhaps it may be as well not to introduce Italian queens until near the close of harvest, and you will receive instructions for introduction from the breeder who sends you the queen or queens.

It may be some comfort for you to know that the more you are stung the less the effect will be.

If the dead young bees thrown out are the skins of the larvae, it indicates starvation. If fully developed young bees are thrown out, it is likely the work of the bee-moth, or, as they are often called, wax-worms. Later in the season it might be the massacre of the drones.

Three Sisters

I feel quite set up by the attention given to my question in regard to the preventing of the tearing down of full sheets of foundation when given to a

swarm [page 131 April American Bee Journal.] The answer is so full and satisfactory that at present I can think of no more questions to ask.

I should have been more specific; the full sheets were fastened by the kerf-and-wedge plan pretty firmly. I don't remember that any were pulled out from behind the wedge but several were torn away from the top-bar.

The frames were wired and the wires were embedded with a cold wheel in a cool place at a cool time. Your answer shows me what was the main cause of the trouble. In some instances the wires had separated from the sheets, in others it had been gnawed away. Medium brood-foundation was used. Your answer is not only helpful in telling me what to do but satisfactory because convincing me that it will not be necessary to paint with wax, an undertaking I do not fancy.

We are three sisters who are trying to support ourselves with poultry, bees and a garden on a six acre place, half of it wooded, in a picturesque location within nine miles of our country's capital. My sisters attend to the poultry and garden while I take care of the bees. I do nearly all the work myself, have a hive-lifter and a big wheeled cart. I have sixty-one colonies now, wintering thirty of them in large dual cases built according to plans similar to those used by Dr. Phillips. The others are protected with wrappings of tar paper, cushions over supers and deep telescope covers on top. Our honey flow for the best honey begins early in May with black locust, followed immediately by tulip, poplar and then clover while tulip is still in bloom, if it is a clover year which does not happen every year. From these sources, when the light honey is plentiful, we get a natural blend of fine flavor and appearance. But it is very important for the best results to have colonies strong rather early. My success in this respect last season was not satisfactory, so in spite of an unusually good honey flow my harvest of the best quality was but little over 2500 pounds. For this reason I am trying heavier winter protection.

I run for both comb and extracted honey, principally the latter, sell at retail, distributing by parcel post. I run an advertisement once a week in a Washington paper and have for-sale signs on the highway which passes near our home. Business is not very brisk, sometimes discouragingly slow, but I am gradually getting known. It is only a few years that I have had so large an apiary.

HANNAH R. SEWALL.

Forest Glen, Md.

Women to the Front

A thrill of pleasure was experienced upon receiving a letter with the heading, "Beechbank Apiary and Poultry Yards," and at the upper left-hand corner, neatly printed, the three names:

Hannah R. Sewall,

Mary F. Sewall,

Margaret L. Sewall.

Unquestionably a firm composed of women; but a mother and daughter, sisters, or what? Inquiry elicited the interesting letter found in this depart-

ment from the specialist in beekeeping.

Another letter-head reads,

Sweet Clover Farms,
Mr. and Mrs. Sam Wilkinson,
Proprietors.

Although Mr. Wilkinson's name comes first, it would not be at all surprising if he should say that "Mrs. Sam" is the more important member of the firm.

Another heading leaves the two members of the firm on exactly equal footing, for it reads:

Sires & Sires,
Producers and Dealers in
PURE HONEY

All this is as it should be, and shows that "the female of the species" is coming to the front to take her proper place in beekeeping. It forms also a good text to urge in this great time of need, when Uncle Sam is insisting that every available inch of ground should be used to add to the world's store of food, and that women should do their bit, that in not many ways could that bit be better done than by taking care of bees. Let it not be forgotten that honey is a food, not only the most delightful sweet in existence, but a nourishing and sustaining article of diet that, pound for pound has few competitors. In Europe they are learning that it is an excellent army ration. At the same time the war has sadly interfered with the supply in that region, and the demand for honey to be exported from this country has already begun. Largely on this account it is predicted that prices will be on an ascending scale such as we have not heretofore known. So for the sake of the pay, as well as for the sake of helping to keep the world from starvation, it is well for some women who are thinking of raising potatoes to consider whether they may not be adapted to the business of beekeeping. Not every one is so adapted, but those who are should not miss their opportunity.

The foregoing appeals particularly to women who are dependent upon their own resources. Another class of women to which the present crisis appeals is the wives of beekeepers. In Europe thousands of colonies of bees have been destroyed by the direct ravages of war, and a still larger number, probably, have been practically lost because the men who cared for them were called to the front, leaving no one behind competent to manage bees.

Some woman may say, "That doesn't appeal to me. My husband manages the bees, and I have enough to do with my household cares without troubling myself with his business. Only those between the ages of 21 and 31 are to be called to the army, and my husband is over that by ten years or more, so why should I bother my head to learn how to run the bees?" Good woman, don't be sure. There are those whose judgment is worth minding who say the present war is likely to continue five years, possibly ten; that as more and more men are called out it will be necessary to call out older men; so that you are not altogether certain how long it will be before you are left with an apiary on your hands. Nowadays "preparedness" is a good motto, and if you are wise you will make yourself ready to do your "bit" by going into the apiary this summer.

MISCELLANEOUS



NEWS ITEMS

The Iowa Short Course.—The first summer short course in beekeeping at the Iowa College of Agriculture was held at Ames May 28 to June 2. The course was hurriedly prepared and offered with little advertising, owing to the fact that it was not finally decided that it should be held until near the close of the school year. However, about thirty beekeepers aside from the regular college students enrolled and the course was a genuine success. A number of well known beekeepers from various parts of the state came to spend a day or two to lend their encouragement and to get new ideas. Mr. G. Jaqua of Traer, Iowa, was the oldest student in attendance. He is 89 years old and has been a beekeeper for forty years. He announced his intention of coming again next year.

The beekeeping work has been making real headway at Ames but a few months and is showing surprising interest. Before the final close of the school year more than 100 girls, students at the college, were taking the course in beekeeping. There is much enthusiasm among the students as well as among the faculty concerning the work and the next school year bids fair to see it firmly established as part of the regular work of this institution.

Prof. F. E. Millen, formerly of the Michigan College is in charge of the work. E. W. Atkins formerly assistant to Mr. F. W. L. Sladen, Dominion

Apiarist of Canada is in charge of experimental work in Apiculture. With Dr. L. H. Pammel, at work on the honey plants, Iowa is starting in to accomplish results. The new law also places the inspection work under direction of the college and provides for regular extension work as well.

Both Millen and Atkins were trained under Morley Pettit at Guelph, Ontario and are among the first men specially trained in regular apicultural courses to be placed in such positions. This is a striking indication of how new this work is in our colleges.

Massachusetts Beekeeping School.

It has been arranged to hold the annual Beekeepers' School under the auspices of this Institution, in Dalton, Massachusetts, in the heart of the Berkshires. Dalton is a beautiful summer place. There are a number of large apiaries in the vicinity as well as apiaries on estates. A detailed program is being compiled.

The school will be held July 11, 12, 13 and 14th. All persons interested are invited to attend. Copies of the program will be mailed upon request. There is no fee or expense attached to attending the school other than perhaps the purchase of a bee-veil.

The program will cover the following points, as well as other subjects. The first day is beginners' day, and will include a full understanding of the necessary materials for beekeeping, of



ONE DIVISION OF THE CLASS OF MORE THAN 100 GIRLS TAKING THE BEEKEEPING COURSE AT THE IOWA COLLEGE OF AGRICULTURE UNDER PROF. MILLEN

bee behavior, and life of bees, with instructions as to manipulation and policy of the beekeeper. The second day will deal with the problems of swarming; measures of swarm control, the making of increase, and comb-honey production. In the afternoon the program will be devoted to queens and queen-rearing. The third day is extracted honey production day, wherein all the phases of production and marketing will be covered. The fourth day is a general field day, and is announced by the Berkshire County Beekeepers Association. This program will be a general interest one, dealing incidentally with the diseases of bees, and more especially with the newer problems.

The Northwestern Kansas Beekeepers' Association held a field meet at Chapman, Kan., May 14.

While the attendance was not large it made up in quality what it lacked in quantity. The meeting in the morning was held at the Dickinson county high school and demonstrations in forming queen-rearing nuclei and 3 frame nuclei for sale were made. At noon dinner was served by the cafeteria department of the high school, A. H. Diehl and H. A. Huff standing treat for the visiting members. After dinner, the meeting adjourned to the Golden Belt Apiary where more demonstrations were made followed by a number of talks. All present enjoyed the meeting and adjourned to meet later at Blue Rapids, Kan., at the call of the members from that place.

HARRY A. HUFF, Sec.

Dandelion Honey.—The production of honey from dandelions has always been an unknown quantity to us here, and the first direct contact the Dadants have ever had with the dandelion honey was last summer when our editor tasted dandelion comb honey in Vermont. And the taste was unmistakable.

This year for the first time, we can report that our own bees gathered honey from dandelions. When the bloom was at its height a few weeks ago, at one of our apiaries the bees stored considerable dandelion honey in their brood chambers and "yellowed" the tops of their combs in a manner similar to the "whitening" from clover.

There is no doubt that the dandelion is becoming more plentiful, in this locality at least. It remains to be seen whether the increase of this plant will in time tend to make a steady honey flow between fruit bloom and clover instead of the customary honey dearth.

Telegraphic Market News Service

We call the especial attention of our readers to an article on this subject in our contributed columns in

which the idea of this service is explained. We urge all to get in touch with the proper authorities in Washington so that you too may get the benefit of such service. No matter whether you are a small or large beekeeper, such news should help you to stabilize your honey prices.

Proposed Telegraphic News Service on Honey by Department of Agriculture

In response to urgent requests, the Office of Markets and Rural Organization of the United States Department of Agriculture is planning to extend its telegraphic market news service to include reports on honey. Practically all growers in the important commercial sections shipping fruits and vegetables are familiar with the market bulletins which have been distributed by the Office of Markets during the past two seasons. These daily bulletins, which are free by mail to any who request them, cover nine of the more important perishable commodities and show daily the number of cars of each commodity which have been shipped from each state during the past twenty-four hours, as well as the following information for each of the eighteen markets reported by representatives of the department. The number of cars which have been received on the market during the past twenty-four hours segregated by originating districts; the general quality and condition of the produce from each section; the weather conditions; and finally the prevailing wholesale (jobbing) prices at 8:00 a. m. These reports are telegraphed to Washington, summarized and edited, and rewired to the various markets where representatives are stationed, with the result that printed bulletins are issued and distributed simultaneously about 1:00 p. m. of the same day from all of these offices. Some idea of the size of the service may be secured when it is understood that over 3,000,000 bulletins were distributed last season to over 50,000 persons located in more than thirty states.

Although it is estimated that only 10 per cent of the honey crop is distributed in car-lot quantities, it is claimed that prices for the local movement depend to a large extent upon the commercial price. An accurate and unbiased report of prevailing prices in the larger markets should do much to prevent speculation, steady the market and tend to eliminate the unfortunate practice of throwing the entire output upon the market at the opening of the season, with the resultant drop in prices and serious scarcity later in the season.

It is impossible at this time to state definitely the exact form in which the proposed honey reports will be issued, as representatives of the department are now visiting the larger markets and interviewing members of the trade, representative producers, and editors of beekeeping journals to ascertain the exact information which is needed, the frequency with which the reports should be issued and other essential details. It appears probable, however, that the reports will be issued semi-weekly, weekly, or even bi-weekly, as daily reports are not essential as in the case of perishable fruits and vegetables. In contents they will follow closely the bulletins now being issued which have just been described. The service will be started about July 1 and the information will be made public through the newspapers and beekeepers' journals as well as by separate bulletins by mail to all interested persons who request the information. Inquiries should be addressed to Charles J. Brand, Chief, Office of Markets and Rural Organization, U. S. Department of Agriculture, Washington, D. C.

A Special Beekeeping Train

For several years the special agricultural train has been a popular method of taking the work of the agricultural colleges direct to the farmers. Tennessee enjoys the distinction of taking out the first beekeeping special. The train was out for three weeks and upwards of seven thousand people



MEMBERS IN ATTENDANCE AT THE NORTHWESTERN KANSAS BEEKEEPERS' FIELD MEET AT CHAPMAN, KAN.

were given instruction.

Beekeeping and poultry go together so nicely that the two were combined, the work in beekeeping being presented by Prof. C. E. Bartholomew formerly of the Iowa Agricultural college but now in the cooperative extension work of the U. S. Department of Agriculture stationed at Knoxville, Tenn. Mr. Crane of the same institution had charge of the poultry.

The train was run over the lines of the Nashville, Chattanooga and St. Louis railroad in Tennessee, in charge of A. D. Knox of the industrial department. Sixty-nine meetings were held in various parts of the State and great interest was manifested by the visitors. Hundreds of men who have heretofore kept their bees in box-hives were instructed in the proper management of bees and shown how futile it is to hope for a good return without good equipment. The car was fitted up with hives and other necessary material essential to successful beekeeping so that everybody was shown by actual demonstration what to use and how to use it. The railroad officials express themselves as much gratified with the results of the special and it is very probable that other similar trains will go out in other parts of the country.

As one of the first three men employed on the department for extension work in beekeeping Prof. Bartholomew has found a great opportunity and is fully alive to the possibilities. We look for beekeeping to develop rapidly as a result of the spread of extension facilities.

Special Notice to All Beekeepers in the Northwest.—At the last meeting of the Chicago-Northwestern Beekeepers' Association a committee was appointed to recommend prices for honey, wholesale and retail. The committee wants the name and address of every beekeeper in the States of Wisconsin, Illinois, Indiana and Michigan who have ten or more colonies of bees, for a mailing list. We expect to send out

three letters about July 15, Sept. 15, and Nov. 15, provided we have sufficient funds.

Hurry up and send in your name and the names of your neighbor beekeepers, and if not a member of this association we would like to have your dues of \$1.50, as we will need all the funds we can get to send out these letters.

Any beekeeper outside of the above mentioned States who is not a member can have these reports by sending 10 cents to pay for printing and postage. Send all names or dues direct to

JOHN C. BULL, Sec.-Treas.,
1013 Calumet Ave., Valparaiso, Ind.

Notes By the Way

One is frequently reminded that it is impossible to keep bees by rule. Every locality and even every colony is a law unto itself. In answer to an inquiry as to when to put on supers, Dr. Miller has said, when the first clover blossom appears. This is perhaps as good a rule as any. However, some colonies will not be ready for supers for a long time after clover begins to bloom while others will swarm before that time unless they be given room. This is written just at the close of fruit bloom in May, yet some of our colonies have already stored considerable honey in supers. Occasionally we have a year in Iowa when strong colonies will store comb-honey from dandelion and finish the sections in fine shape. In such a season much would be lost from the delay in giving supers until the first clover blossoms appeared. The time to give supers is when the bees are strong enough to occupy them and there is something in the field for them to gather.

The yellow flowers of the buffalo currant, *Ribes aureum*, are very fragrant and apparently contain much nectar. I have often noticed the bees working on the blossoms but since the corolla tubes are a half inch or more in length supposed they were getting only pollen. One day recently I found bees which were unmistakably getting nectar from this source. Upon close examination of the flowers I found that many of the tubes had been slit entirely down one side by some unknown agency and the bees were inserting their tongues into the slits. I am wondering whether a similar condition may not occasionally occur with the red clover and thus account for the

reports of yields of honey from that source.

The past winter has been an unusually hard one in Iowa, yet our bees have consumed less stores than usual and little more than half the amount required the winter previous. Apparently the difference is in the shorter period of brood-rearing. Our best colonies discontinued brood-rearing in October and did not resume until late in February or early in March. (Wintered in packing cases outside.) The farther south the more honey is likely to be consumed for wintering because of the larger amount of brood reared. F. C. P.

Great Economy Possible

"A great economy in the consumption of tins would be effected if the public would, as far as possible, buy the single 'ready-to-eat' foods, such as baked beans, meat loaves, and the like, of the 'heat-and-serve' kind, from delicatessen and bake shops. These foods constitute one of the largest drains on the tin supply. To relieve this drain would release large quantities of tin



Thousands of people were given instructions in beekeeping along the way

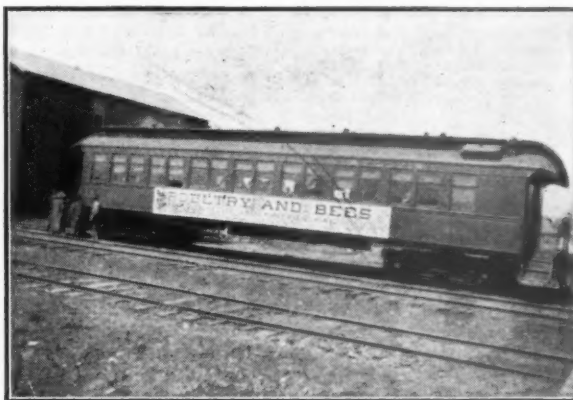
for the imperative summer demand.

"For home use, in putting up jellies and preserves, the fiber containers may be used, and will be found cheap and satisfactory. Information as to where they may be obtained will be gladly furnished inquirers who address the Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, or any of its branches in the several cities of the country."

It seems to us that "fiber" containers coated inside with a light paraffin coat would be very serviceable for honey.

Productive Dairying.—We are in receipt from the publishers, J. B. Lippincott & Co., of Philadelphia, of another book in the Farm Manual Series, to which belongs Frank C. Pellett's book "Productive Beekeeping."

The new book is entitled "Productive Dairying," and is written by that excellent authority on the subject, R. M. Washburn, who is Professor of Dairy Husbandry at the University of Minnesota. The book contains 432 pages and 131 illustrations. The aim of the author is to take dairying out of the inefficient businesses and put it on a paying business basis.



LECTURE CAR ON THE BEEKEEPERS' SPECIAL, TOURING TENNESSEE

Any one interested at all in dairying will do well to get this book. It sells for \$1.75, and can be obtained direct from the publishers, or we can furnish it direct from this office.

Combs Horizontally Between Hive-Bodies.—Last June during the commencement of the honey flow from clover, we tried an experiment with eight colonies of bees by placing between the two Heddon hive brood-bodies a shallow frame, a frame about 1¾ inches deep with three sides only, the open side has a skeleton drawer to slide in and out. On this skeleton drawer we laid two Heddon frames filled with drawn brood-combs which had been wired and were old and strong. When the combs were in place a good bee-space was maintained both above and below the combs, the combs were empty when placed in the drawer, but were soon used by the queens. Eggs and brood were soon found on both upper and lower sides, some honey was also stored around the outside edges of combs; later on queen-cell cups were built on the underside of combs and also in other parts of the hive.

In no case do I remember of finding queen-cells on the horizontal combs only. I found trouble in removing the drawer, as the empty spaces were full of bees. Also many brace combs were built up under its support, the horizontal combs, the bees having the idea that these combs were liable to sag down and needed some supports, or they needed some step ladders to walk up. Anyway, when I attempted to draw out the combs, the brace-combs underneath would mash bees, honey, and queen-cells, and so roll them together that I soon gave it up.

If I try it again this season I think I would have a slatted bottom in the drawer. Our aim is to have a quick and easy method of finding queen cell conditions in colonies preparing to swarm.

E. T. BAINARD.

Lambeth, Ont.

Canning Fruit With Honey—Can What you Can.—There is no mystery or luck about the successful canning of fruit. It properly done, failure is almost out of the question. The fruits or vegetables should be barely ripe, never over-ripe, perfect of their kind, or at least with no fermentation started in them, and the sooner they are taken from tree or garden and sealed up in jars the better. New fruit jars are best put over the fire in cold water to cover them, brought slowly to a boil, and slowly cooled; then they will stand greater extremes of heat and cold.

If particular about keeping the fruit in shape, or where a large amount is to be done at once, it is usually put uncorked into the jars and covered with the honey. The jars are then set into a larger boiler with a perforated rest under them to keep them from the bottom. Fill the boiler with cold water nearly to the shoulders of the jars. Screw the tops on rather loosely; put the cover on the boiler and bring to a boil. Both fruit and vegetables can be done up in this way. As a rule the latter is more difficult to keep than

fruit, and require much longer cooking.

Twelve quarts of raspberries require two quarts of honey. Put two quarts of the fruit in the preserving-kettle and heat slowly on the stove. Crush the berries with a wooden vegetable masher and spread a square of cheese-cloth over a bowl and turn the crushed berries and juice into it. Press out the juice and turn it into the preserving kettle. Add two quarts of honey and put it on the stove. When the syrup begins to boil, add the remaining ten quarts of berries. Let them heat slowly. Boil ten minutes, counting from the time they begin to bubble. Skim well while boiling. Put in cans and seal.

Of cherries, take six quarts, 1½ quarts of honey. Measure the cherries after the stones have been removed. Pit them or not, as you please. If you pit them, be careful to save all the juice. Put the honey in the preserving-kettle over the fire until it simmers. Put in the cherries and heat slowly to the boiling-point. Boil ten minutes, skimming carefully.

Of pears, plums, and peaches, you take the weight of the fruit in honey. Plums should boil about fifteen minutes;

peaches and pears, from twenty to thirty.

Blackberries are put up same as raspberries.

Of strawberries, take four quarts of fruit and 1½ quarts of honey. Boil ten minutes. From the time it begins to boil, skim well.

Of rhubarb, take equal weight of fruit and honey. Boil ten minutes.

Of apples, take two quarts of fruit and one pint of honey and half a pint of water. Boil twenty minutes.

Of corn, take two quarts, cut off the ear, half a pint of honey, one pint of water, four even tablespoonfuls of salt; boil twenty or thirty minutes, then put into jars or bottles.

Of tomatoes, take three quarts, one pint of honey, three tablespoonfuls of salt; boil the same as corn.

Of corn and tomatoes, take two quarts of corn, two quarts of tomatoes, one and a half pints of honey, half a pint of water, five even tablespoonfuls of salt; boil thirty minutes, then seal.

Grape, raspberry, blackberry, cherry, plum, and peach juices are made as follows: One quart of juice, one pint of honey; boil from twenty to thirty minutes.

[Mrs.] H. K. BEARD.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Location—Queens—Ventilation—Inspector

1. Which of the districts of North America as described on page 116 of the American Bee Journal, is best for a beekeeper to move to in the United States?
2. What is the best plant as a honey producer in this locality? I wish to have one that will bear the same season it is planted.
3. Are virgin queens sold at 25, 30, and 45 cents profit, or would you advise me to buy a higher priced queen, an untested, tested, or select tested?
4. How can I increase my colonies artificially? I was thinking of taking the two center frames of brood and bees from one colony and putting these into an empty hive with foundation, as I have no drawn comb.
5. Will bees in pound packages and nuclei from Alabama or Texas arrive in Grand Rapids in good condition?
6. What is the best method of ventilation for the summer for a person who sees his bees about once a week?
7. How often should I requeen, conditions being normal?
8. Do you consider it necessary to clip queens' wings?
9. How can I change spacing brood frames from 1½ inch to 1¼ inch, center to center?
10. Is there an apiair inspector in Michigan? Who is he, and how can I reach him?

MICHIGAN.

ANSWERS.—1. If I were obliged to move into a new district this year, I wouldn't know which one to choose. There are advantages and disadvantages in each, and quite often it happens that if a beekeeper move some distance to a new location he is glad to move back again.

2. Mignonette would give a good yield this year if you should plant it largely; but you would not get honey enough to pay if beans are a paying crop in your locality they might do.

3. Virgins are hardly advisable, unless you have excellent drones. What kind of laying queens it is best to buy depends on circumstances. As a rule, it may be as well to buy

untested, and buy in a larger number.

4. That's one of the questions that belong to your book and not to this department which is not supposed to take the place of a book, but to be supplementary. Perhaps no book gives more fully the different plans of increase than does "Fifty Years Among the Bees." The plan you suggest will answer. In a way, as will almost any sort of division, but if you trust to the two frames of brood and bees on a new stand, I wouldn't give much for the queen they will rear. Take the queen with the two brood and bees, and there will be left on the old stand a strong force to rear good queen-cells. A week or ten days later let the two hives swap places.

5. Likely they will.

6. The ventilation should be the same whether you see your bees once a week or once an hour. It doesn't matter such a great deal how the ventilation is given, so there is enough. I have an entrance the width of the hive and two inches deep, and beside this generally a quarter-inch opening at the back of the hive under the super. Some raise the hive half an inch or more by putting blocks under each corner.

7. Opinions differ. Some think it wise to requeen each year or each two years. Others leave requeening to the bees. If you have good bees it is safe to leave the matter in their hands, in the average locality. I never kill a queen on account of age, but if a queen doesn't come up to the mark I replace her, no matter how young she is.

8. Hardly absolutely necessary, but if you should offer me half a dollar apiece to let my queens go unclipped, you wouldn't have many half dollars to pay.

9. One way is to use the same kind of spacers I have been using for many years,

common single nails driven into the end-bars the proper depth.

10. B. F. Kindig, State Inspector, East Lansing, Mich.

Result of Put Up Plan—Disease

1. A colony swarmed on April 3, and was treated on your "put up plan" the same day, leaving two frames of brood below. On April 7 I took away those two frames of brood, giving them two others from my best queen. April 10 I put down the queen, placing the hive which had been below with its two frames of brood and bees on a new stand. The next morning I found where I had "put down the queen" there had been a general fight and more than a quart of bees had already been killed. The weather was cool and cloudy, probably there had been no honey coming for several days. Was this the cause or was it because I was three days late in putting down the queen?

2. The last few days I have lost a great many bees, the ground for 10 or 15 feet from the hives being thick with them crawling around, apparently too weak to fly. Their appearance is normal as far as I can see. The abdomen might be a little enlarged, but not very pronounced. There is no trembling or nervousness, in fact the opposite. They seem rather dopey and slow of movement, like bees when the temperature gets low. The fruit bloom is past by about two weeks, so I hardly think they have been poisoned by spray. What is the cause?

CALIFORNIA.

ANSWERS.—1. This is new to me; never had any trouble of the kind, although I think I never left the queen up so long. I hardly think the trouble would have occurred from either the long time alone or the lack of forage, but it took the combination of both causes.

2. I give it up. It looks rather more like poisoning than anything else.

Hives—Sections

1. I have three hives of bees that wintered in good shape, and I am rather in doubt as to what style of hives to buy. Do you use the Danzenbaker brood-chamber and frames or regular Hoffman hive-body? No doubt the Hoffman frames are easiest to remove from the hive. Would you advise me to use the Protection hive or plain single-walled hive and make the packing boxes instead for them? The difference in price of hives will buy lumber for making packing boxes, I believe.

2. Do the plain 4x5x1 3/4 inch sections when filled in good shape, weigh net 16 ounces? Would you advise using the 1 1/4-inch section for full 16 ounces net weight in honey? Can I get as good results from this section as from 4x4x1 1/4 inch beeway sections?

3. Would it be best to use an extracting frame on each outside row of supers or will this attract the queen up into the super?

MICHIGAN.

ANSWERS.—1. Unless I am greatly mistaken there is no Hoffman hive-body, although Hoffman frames are used in dovetailed hives, and a dovetailed hive is nothing but a Langstroth hive with dovetailed corners. The Hoffman frame has been so changed that not much of the Hoffman is left to it. It, again, is only one form of the Langstroth frame. I use dovetailed hives with Miller frames, and Miller frames are Langstroth frames with common single nails for spacers. You are right that the Hoffman frames as now made are easier to remove than the Danzenbaker, because the point of attachment is less, and it is still less in the Miller frame.

Like enough you would be just as well suited with the single walled hive.

2. There is no size of section that can be relied on to contain a net weight of 16 ounces at all times. The seasons vary, and there will be variation in colonies, and even in the same colony in the same season all will not be alike. After trying different kinds on a considerable scale, I prefer the 4x4x1 1/4. In this I think I am not different from the majority.

3. If your supers are such that you can use an extracting comb each side of the sections, there will be less trouble with un-

finished sections, although possibly a little more danger of trouble from the queen going up. But I am not sure of the latter from experience.

Transferring—Queens Mating—Long Tongued Bees

1. If there is a colony of bees under the weather-boards of a house and I wish to put them in a hive, would the queen go into the hive if I use a Porter bee-escape?

2. If there is a colony of bees in a log or box hive, would it be all right to put a hive on top of it and drive the queen with some of the bees up into the hive and put a queen excluder between until the brood below is hatched to save the brood.

3. My hives have about an inch space between the frames and cover. Would you prefer blankets on top of the frames or not?

4. How far is a drone likely to come to mate with a queen? Will queens be likely to meet a drone from a small apiary a mile away?

5. What is the best thing to do with a colony that is being robbed, if I wish to save it?

6. Would it be all right to kill all drones of inferior colonies at all times?

7. Will the long-tongued bees do as well as the common bees when there is no red clover?

8. Where can I get long-tongued Italian queens?

9. If I were in a great hurry would you answer my questions by return mail if I send about 15 cents for extra trouble?

ILLINOIS.

ANSWERS.—1. If the colony should swarm the queen would go out through an escape, but not at any other time unless smoke or something of the kind were used strong enough to drive all the bees out. [Even then it would be doubtful.—EDITOR.]

2. Yes, but it will be a gain if you have in the hive above a frame of brood, or at least an old brood-comb.

3. Yes, for with as much as one inch of room the bees will be pretty sure to make trouble building comb in the space if there is nothing to prevent.

4. Likely there is possibility of mixing with apiaries five miles apart, although the chance is very little. Some think that queens hardly go more than a half mile away to mate. There would be considerable chance of mixing with a small apiary a mile away.

5. Contract the entrance, pile up hay to the top of the hive and keep it drenched with water. Or take the hive down cellar and return about dark on a succeeding day.

6. Yes.

7. Yes, so far as I know.

8. I am not sure that any are being offered nowadays. Long-tongued bees are not a persistent race.

9. No; if there were no other reason against answering by mail, a sufficient one is that in that case only one person would be benefited, while in print many may benefit.

Beekeepers' Association—Price of Honey

1. I have seen in the American Bee Journal that it is to the advantage of every beekeeper to join some bee association, to enable him to receive better prices for his honey, and also to be posted on the market, but as I am so far away from any such organization I would like to have advice, if any, on what association to join?

2. Owing to the fact that everything is going up in prices, what would you suggest settling my price of honey at? I have been selling the same at 10 cents per pound.

ARKANSAS.

ANSWERS.—1. I am not certain where is the beekeepers' association nearest you, but as you are in the State of Arkansas it may be that the Arkansas Beekeepers' Association might suit you. On page 160 of this Journal for May you will see notice of its meeting May 12 at Nickerson, Kan. The secretary is J. L. Pelham, but unfortunately I cannot give his address.—[Mr. Pelham's address in Hutchinson, Kan.—EDITOR.]

2. It is not easy to say what you should get

for your honey without knowing anything about what it is like, but on general principles one would suppose there should be an advance of at least three cents a pound. Indeed, if you have been retailing to the consumer at 10 cents a pound, he hardly ought to complain at 15 cents a pound.

Bees Killing a New Queen—Queen-Cells

1. While perusing over some bee clippings, I met with one stating that it is quite liable that one may seem perfectly successful about the introduction of a queen, eggs are laid, etc., when, after two or three weeks the bees kill the queen, apparently after she has done enough to enable them to rear a queen of their own. What do you think of this? Is there any way to prevent it?

2. Suppose a colony has a lot of queen-cells of which quite a number are capped, and if one removes every frame having any cells, and leaves them but a frame of brood or eggs and fills up the space with frames of full foundation, would swarming be forestalled? By being a close watcher as to this, one might secure a lot of desirable queen cells from any good colony.

PENNSYLVANIA.

ANSWERS.—1. Yes, that sort of thing sometimes happens. I am glad to say it has not been a frequent thing with me, and sorry to say I know of no way to prevent it.

2. Yes, if you take away all but one brood, all idea of swarming will be given up for the time, generally for the season, cells or no cells. You see it's practically shaking a swarm. But in watching in this way for mature cells, you must keep in mind that a colony is likely to swarm as soon as the first queen-cell is sealed.

Foulbrood

1. Are the bees of a young queen more apt to sting than those of an old queen?

2. What time in the spring is foulbrood most likely to appear?

3. Is there any way of getting rid of American foulbrood other than of destroying the whole colony?

TENNESSEE.

ANSWERS.—1. I don't believe there is any difference.

2. In cases where the disease was in the hive the previous season, you may find the signs in the brood about as soon as the combs are well filled with brood. When it appears in a colony for the first time, it may appear at any time throughout the active season.

3. Oh, yes; the bees and the hive are generally saved; the combs are melted and the wax saved, and some think it worth while to save the frames. Indeed, total destruction is seldom resorted to unless it be the first attack, and only one or two colonies in the apiary are affected.

Poisonous Honey

I have been told that bees gather nectar from certain plants, which causes the honey to be poisonous. Is this the case, and if so, what are the plants?

NEW YORK.

ANSWER.—There is an ancient story about an army of soldiers being poisoned with honey, and there have been reports of a certain plant down South yielding poisonous honey, but I don't know whether there's anything in it.

When to Put on Supers

1. When is the best time to put on supers, before swarming or after?

2. When the weather is warm the bees are all over the front of the hive. What is the cause?

MISSOURI.

ANSWERS.—1. The time to put on supers is a little before the bees are storing honey so fast that there isn't room for it in the brood-chamber. An old rule was to give supers as soon as the bees begin to put bits of white wax on the top-bars or upper parts of the comb. It is better to act a little before that.

You probably have white clover in your region, and it is a good plan to give supers as soon as you see the very first clover in bloom. That, you see, will generally be before swarming. Better give supers a week too soon than a day too late.

2. It probably means lack of room, lack of shade, and insufficient ventilation.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

FULMER'S Gray Caucasian queens are winners; also by frame and pound.

WANTED to buy a foundation making outfit. W. D. Soper, Jackson, Mich.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 181st 84 Cortland St., New York City.

WARRANTED queens from one of Dr. Miller's breeders, 50c each. Geo. A. Hummer & Sons, Prairie Point, Miss.

TESTED leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10 per dozen. A. W. Yates, 3 Chapman St., Hartford, Conn.

PLACE your order early to insure prompt service. Tested, \$1.25; untested, \$1.00. Italians and Goldens. John W. Pharr, Berclair, Tex.

PHELPS' Golden Italian Bees are hustlers

VIGOROUS prolific Italian queens \$1.00; 6, \$5.00, June 1st. My circular gives best methods of introduction. A. V. Small, 2303 Agency Road, St. Joseph, Mo.

THREE-BANDED ITALIANS—One, 75c; six, \$4.00; twelve, \$7.50. Tested, one, \$1.00; six, \$5.70; twelve, \$10.75. Cotton Belt Apiaries, Box 83, Roxton, Tex.

FOR SALE—Bright Italian queens, 65 cts. each; \$6.50 per doz. Ready now; safe arrival and satisfaction guaranteed. T. J. Talley, Rt. 3, Greenville, Ala.

FOR SALE—12 SWARMS Italian bees in Root 10-frame Buckeye and standard hives. Also supers, extractor and supplies. Ask for list and photo. Fay McFadden, Granville, N. Y.

MY BRIGHT Italian queens will be ready to ship after April 1st at 60c each. Send for price list. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

GOLDEN ITALIAN QUEENS, no better honey gatherers anywhere at any price. Untested, \$1.00. Tested, \$2.00. Wallace R. Beaver, Lincoln, Ill.

ITALIAN QUEENS from the E. E. Mott's strain of bees. Unt. 75c each; \$8.00 per doz. Safe delivery guaranteed. Earl E. Mott, Glenwood, Mich.

CHAS ISRAEL BROS. Co., 486 Canal St., New York. Established 1878. We are in the market for Extracted Honey. Send prices delivered New York. State the quantities you have and how packed and send samples.

RHODE ISLAND Queens, Italian, Carniolan, Caucasian and Banats. Tested in May, \$2.00. Untested, \$1.50. Full colonies and bees by the pound. Send for circular. Edwin Tuttle, Woonsocket, R. I.

GOLDENS that are true to name. One race only. Unt. 75c each; 6, \$4.25; 12, \$8.00. For larger lots write for prices. Tested, \$1.50. Sel. test, \$2.00. Breeders, \$5.00 and \$10. Garden City Apiaries, San Jose, Calif.

FOR SALE—Golden untested queen, \$1.00; 6 for \$5.00. For quantities, write me. Satisfaction guaranteed. R. O. Cox, Rt. 4, Greenville, Ala.

FINEST ITALIAN QUEENS from June 1st to Nov. 1st. \$1.00 each; 6 for \$5.00. My circular gives good methods. Ask for one. J. W. Romberger, 3113 Locust St., St. Joe, Mo.

HEAD your colonies with some of our vigorous young three banded Italian queens. Untested, June 1, \$1.00; per doz., \$9.00; nuclei and full colonies. Satisfaction guaranteed. A. E. Crandall & Son, Berlin, Conn.

WELL BRED 3 banded Italian queens. Unt. 85; 6, \$1.50; 12, \$8.00. Tested, \$1.25; 6, \$7.00; 12, \$13. Queens mailed in new style introducing cage. Write for price list on queens, nuclei and full colonies. No disease. J. F. Diemer, Rt. 3, Liberty, Mo.

FOR SALE—Three-banded Italian queens from the best honey gathering strains obtainable. Untested queens, \$1.00; 6, \$5.00; 12, \$9.00. Tested queens, \$1.50 each; 6, \$8.00. Robt. B. Spicer, Wharton, N. J.

QUEENS—3-banded Italians. Bred strictly for business. Untested, 60c. Tested, \$1.00. Safe arrival and satisfaction guaranteed or money refunded. Sinking Creek Apiaries, Gimlet, Ky.

FOR SALE in their season Italian queens, bees and honey. For prices on bees and queens send for circular, or see our large add in May or June issue. H. G. Quirin, Bellevue, Ohio.

TO INQUIRERS—I sell no queens directly but have an arrangement with the Stover Apiaries, Starkville, Miss., which I keep supplied with best breeders, and they can supply you with my stock. C. C. Miller, Marengo, Ill.

GOLDEN Italian Queens by June 1st. Untested, 75c, or six for \$4.25; doz., \$8.00. Select untested, \$1.00. Tested, \$1.25; six for \$7.00. Breeders, \$5.00. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Iowa.

QUEENS OF QUALITY—Our Hand-Moore strain of three-banded Italians are beautiful, and good honey gatherers. Bred strictly for business. Untested, 75c; half doz., \$4.00. Select, \$1.00. W. A. Latshaw Co., Clarion, Mich.

GOLDEN ITALIAN queens that produce golden bees very gentle to handle; good honey gatherers; no foulbrood. Select test, \$1.25. Tested, 65c; 6, \$3.75; 12, \$7.00. No nuclei or bees for sale. D. T. Gaster, Rt. 2, Randleman, N. C.

GOLDEN ITALIAN QUEENS bred strictly for business that produce a strong race of honey gatherers. Unt., each, 75c; 6, \$4.25; 12, \$8.00. For larger lots write for prices. Tested each, \$1.50. Prompt service and satisfaction guaranteed. L. J. Dunn, 50 Broadway Ave., San Jose, Calif.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00. 2Atf J. B. Brockwell, Barnetts, Va.

GOOD ITALIAN QUEENS—Tested, \$1.00; untested, 75c. One-pound packages with untested queen, \$2.25; 2-lb. package, \$3.25. One-pound package with tested queen, \$2.50; 2-lb. package, \$3.50. Nuclei with untested queen, 2-frame, \$3.25; 3-frame, \$4.00. With tested queen, 2-frame, \$3.50; 3-frame, \$4.25. We can please you. G. W. Moon, 1004 Park Ave., Little Rock, Ark.

CLOVER QUEENS, pure Italian, untested, 75c. Tested, \$1.50. Special prices on bees by pound and nuclei in July, \$1.50 per pound and \$1.25 per frame. Add price of queen. No disease. Satisfaction and safe delivery guaranteed. J. F. Coyle, Rt. 27, Penfield, Ill.

GRAY CAUCASIANS, an exceptionally vigorous, prolific, long lived race. Early breeders, gentle, and best of honey gatherers. Untested, \$1.00. Select unt., \$1.25. Tested, \$2.00. Select tested, \$2.50. Improved northern bred Italian queens as good as the best at same prices. Ask for circular. F. L. Barber, The Queen Breeder, Lowville, Lewis Co., N. Y.

GOLDEN ITALIAN QUEENS from a breeder that was 1st premium winner at Ill. State Fair in 1916. Untested, 75c; six for \$4.25; 12 for \$8.00. Select untested, one, \$1.00; 6, \$5.00; 12, \$9.00. Tested, \$1.50; 6, \$8.00. A. O. Heinzel, Rt. 3, Lincoln, Ill.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

GOLDEN ITALIAN queens of the quality you need. Bred strictly to produce Golden bees that get the honey. One, 75c; 6, \$4.25; 12, \$8.25; 50 or more, 60c each. Prompt delivery and satisfaction guaranteed. L. J. Pfeiffer, Rt. A, Bx. 210, Los Gatos, Calif.

FOR SALE—Three-band Italian bees and queens; bred from the best honey gathering strains obtainable. Untested queens, 75c; 6, \$4.25; 12, \$8.00. Tested queens, \$1.50 each. For queens in large quantities and bees by the pound write for prices. Robt. B. Spicer, Wharton, N. J.

I AM NOW prepared to supply you with Golden 3-banded and Carniolan queens. Give me a trial and be pleased. Tested, each, \$1.00; 12 or more, 85c each. Untested, 75c each; 12 or more, 65c each. Ten percent discount on orders booked 30 days before shipment. No credit; no c. o. d. shipments. I. N. Bankston, Eagle Ford, Tex.

HONEY LABELS

HONEY LABELS that will tempt the consumer to buy your honey. Neat, attractive labels at right prices. Samples free. Liberty Pub. Co., Sta. D, Box 4 H, Cleveland, O.

HONEY LABELS.—We have just issued a new and up-to-date catalog of honey labels and stationery. Write for your copy. Neat labels and quick delivery guaranteed. American Bee Journal, Hamilton, Ill.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

WANTED—Beeswax at all times in any quantity, for cash or in exchange for supplies. Dadant & Sons, Hamilton, Ill.

WANTED TO BUY a quantity of dark and amber honey for baking purposes. A. G. Woodman Co., Grand Rapids, Mich.

FOR SALE to the highest bidder a limited quantity of Michigan's best white extracted honey, in 60-pound tins. A. G. Woodman, Co., Grand Rapids, Mich.

WANTED—White and light amber extracted honey in any quantity. White clover and raspberry preferred. J. J. Stringham, 105 Park Place, N. Y.

COMB HONEY our specialty. Highest market prices obtained. Consignments of Extracted Honey also solicited. Albert Hurt & Co., New Orleans, La.

To SELL or exchange for bees or hives extra fine red or yellow Carneau Pigeons, La-frauiere stock; breeders of very large squabs. Write Isabella E. Jewell, Vineland, N. J.

WANTED—Extracted light and amber honey. Send sample with the lowest cash price. Can use clean beeswax also. D. H. Welch, Racine, Wis.

WANTED—Carload or less extracted honey State price and quantity. If needed we can supply tins or barrels for crop. Hoffman & Hauck, Richmond Hill, N. Y.

WANTED—Wax and old combs for cash or to make up on shares. "Best quality" foundation made and sold cheap in small lots. J. J. Angus, Grand Haven, Mich.

FOR SALE—Raspberry, basswood, No. 1 white comb, \$3.00 per case; fancy, \$3.25; 2d Danz sections to case; extracted, 120-lb. cases, 15c per lb. W. A. Latshaw Co., Clarion, Mich.

400 POUNDS EXTRACTED HONEY IN TWO YEARS, such is the record of the colony of my breeding queen. Unt 75c each; six, \$1.25; 12, \$8.00. 3-band Italians only. Circular free. J. I. Banks, Dowelltown, Tenn.

WANTED—Extracted white clover and light amber honey. Will buy in lots of 1000 pounds to a carload. I pay cash. State what you have and send sample with lowest price. Write. M. E. Eggers, Rt. 1, Eau Claire, Wis.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices. Charging but 5c a pound for wax rendered.

The Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

HONEY WANTED—We are in the market for white and light amber grades of honey, also off grades which are suitable for baking. If you have such honey to offer, please send us sample, state the quantity you have, how packed and your lowest price for same. Dadant & Sons, Hamilton, Ill.

FOR SALE—Famous Root's, Moore's, Davis' extra select strain of honey gatherers. Mated with Geo. B. Howe's select drones; unsurpassed for honey gathering, gentleness and disease resisting. Most all leading beekeepers say no better bees than 3-band Italians. See my large ad in May issue.

Untested, 1, 75c; doz., \$8.00; 1/2 doz., \$4.00. Select untested, 1, \$1.00; doz., \$8.50; 1/2 doz., \$4.50. Tested, 1, \$1.25. Select tested, 1, \$1.50. Extra select tested, 1, \$2.00. Breeders, \$5.00. Bees with queen, per lb., \$2.50; 6 lbs., \$12; 12 lbs., \$20. Try my bees and queens.

H. B. Murray, Liberty, N. C.

GOLDEN 3 BAND Italian and Carniolan queens: Virgin, one, 50c; 6, \$2.50; 12, \$4.00; 100, \$25. Untested, one, 75c; 6, \$4.20; 12, \$7.50; 100, \$60. Select untested, one, 85c; 6, \$4.80; 12, \$7.00; 100, \$70. Tested, one, \$1.00; 6, \$5.40; 12, \$10.20; 100, \$80. Select tested, one, \$1.25; 12, \$13.80; 100, \$100. Breeders, \$3.00 each.

Bees in packages without combs: 1/2-lb., 75c; 1-lb., \$1.25; 2-lb., \$2.25. Nuclei, 1-frame, \$1.25; 2 frames, \$2.25; 3 frames, \$4.00. Add price of queens wanted. We guarantee safe arrival and no disease.

C. B. Bankston, Buffalo, Tex.

SUPPLIES.

FOR SALE—New 165-lb. honey kegs at 65c each, f. o. b. factory. A. L. Stevens, Venice Center, N. Y.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog. A. E. Burdick, Sunnyside, Wash.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 44th Paris, Tex.

ONE ROOT Hatch wax press, never used. Also 44 gauge shot gun good as new. \$5.00 for press and \$1.00 for gun. Both bargains. W. S. Pangburn, Center Junction, Iowa.

FOR SALE—40 new hives, never used, Dadant make, dovetailed, one or two story, nailed and painted. 20 percent off regular price. Also some used hives and supers at a bargain. Write quick. W. B. Davis Co., Aurora, Ill.

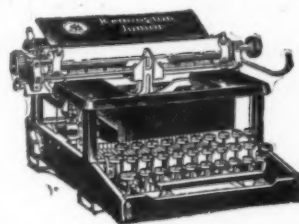
MISCELLANEOUS

25 LADIES' COOTS, bird dogs, wild ducks for sale or exchange for bees. A. J. Graves, Ocheyedan, Iowa.

FOR SALE—43 acres in Delta Co., Colo., 9 acres in full bearing orchard that will have a heavy crop of apples, 1/4 acres in alfalfa. First crop will be ready to cut in 20 days. More land to clear. Excellent water right; new 6 room house, cistern, etc. A very good bee country. Will sell with stock and bees or without. For particulars write to J. M. Schraft, Austin, Colo.

WANTED

WANTED—Your old combs, cappings or slumgum to render into beeswax by our high steam pressure wax presses. Dadant & Sons, Hamilton, Ill.



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We will send it on ten days' examination to any address within the first and second parcel post zones of any Remington branch office. If you decide not to keep it, return within ten days—no obligation involved.

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Send me a Remington Junior Typewriter, price \$50, on free examination. It is understood that I may return the machine, if I choose within ten days. If I decide to purchase it, I agree to pay for it in 10 monthly payments of \$5 each.

Our Bees are Gentle



Nope, you won't get stung if you buy queens from us. Our bees are the hardy, leather colored, showing from three to five yellow bands. We have many letters testifying to their wintering and honey getting qualities.

Price \$1.00 each; \$9.00 per dozen; \$70 per hundred.

Send for our complete price list and booklet describing our high-grade Italian bees.

JAY SMITH
1159 DeWolfe St.,
Vincennes, Ind.

ENERGETIC Honey Gatherers

Best 3-banded Italian bees and queens. Untested, 75c; tested, \$1.25. Bees \$1.25 per pound. All orders filled promptly or your money refunded. Safe delivery guaranteed.

GILA VALLEY APIARIES
Duncan, Arizona

MOTT'S NORTHERN-BRED ITALIAN QUEENS

that resist disease well. Those that resist disease must be hardy, prolific, and hustlers; they are gentle. Bees per pound. Plans on "How to Introduce Queens and Increase," 25 cents. List free.

E. E. MOTT, Glenwood, Mich.

The Eastern New York Beekeepers Association will hold a field day and basket picnic, under the old elm tree, at the apiary of the President, W. D. Wright, Altamont, N. Y., on Wednesday, July 25, at 10 o'clock, a.m. A cordial invitation is extended to all who are interested: bring your families.

S. DAVENPORT, Secretary.

Indian Fields, N. Y.

Practical Bee Guide, by J. G. Digges.—Any one who wishes to become acquainted with the manner and methods of beekeeping in the old country, and in Ireland particularly, ought to read this book. Price, \$1.00, postpaid, or with the American Bee Journal for one year, \$1.75.

British Beekeeper's Guide Book was written by Thos. Wm. Cowan, England's foremost bee writer. He has condensed the work as much as possible. It is well bound and illustrated; contains 180 pages. Price, postpaid, \$1.00.

Crop Reports and Market Conditions

OUR CROP REPORTS AND MARKET CONDITIONS

In our last circular letter to reporters the following questions were asked:

1. Conditions of honey plants compared to 1916?
2. How is the honey flow?
3. Honey movements and prices. Is there any demand from consumers direct? Is there any demand from big buyers and what prices are they offering? Also, is any honey being sold or contracted, and at what price?
4. What do you expect to realize for your honey, wholesale and retail?

HONEY PLANT CONDITIONS

In the New England States the clover is in excellent shape though two weeks late. There is any way from 75 to 100% as much in evidence as last year. Some parts of New York report much less, while Pennsylvania seems to have about as much as last year. In the extreme southeast the spring crop has been harvested. Prospects for the summer flow are only fair. Sweet Clover is very backward.

Throughout the central west the season is anywhere from ten days to two weeks behind. Ohio reports three-fourths as much clover as last year, Minnesota expects a bumper crop, Wisconsin and Michigan have average prospects. Illinois and Iowa generally expect very little clover honey, if any at all. Missouri seems to have a little better prospect, as do Kansas and Nebraska. The excessive rains in this section, however, have brought out the young clover and the prospects for a late fall flow are good, with favorable weather.

In Texas for the most part the season is and will be a failure. Practically no honey was harvested from the early flowers, and some sections report no prospects for the summer.

The whole west, including California, reports at least conditions up to last year, and many parts of California expect a much larger crop than in 1916. The condition in Idaho is much improved over 1916, when the crop was almost a failure.

THE HONEY FLOW

There has naturally been no honey flow to speak of in the northern half of the country. Clover is late and probably will not yield to maximum till the time this journal is in the hands of readers. Florida and Georgia report a very good early flow, probably better than last year, and the early flow in California has been good, with the bees likely in a little more backward condition to harvest the early crop.

HONEY MOVEMENTS AND PRICES

Southern new crop honey has brought 9 to 10 cents per pound f. o. b. shipping points in barrels, and the en-

tire crop has been disposed of, most of it going to the New York markets.

The orange honey of California is all cleaned up. One commission firm in Chicago was offering a carload at 14c for extracted f. o. b.

Big buyers are still very active, and in most cases are offering larger prices, although one report from Minnesota is that honey is being offered on at 8 cents for white clover. In no year has there been, probably, such a varying price offered for good extracted honey. Some still report offers of 7 to 8 cents for best extracted, while some of the larger producers have sold at as high a figure as 10 cents, one being offered and refusing 9¼ cents in Wyoming for all the honey he could get.

The demand for export is still strong, with a doubt as to whether foreign buyers would be able to pick up as much as they desire at figures which they deem reasonable. One order was placed for water white honey at about 12 cents per pound f. o. b. New York, with the direct stipulation that the seller was to arrange for ship space to England. This protected the foreign buyer in case shipping conditions got in such shape that space could not be secured.

Comb honey seems not to be even considered up to the present, and many predict that it would not be surprising to see extracted honey sell for as high a price as comb before the year is ended.

The shortage of tin cans is going to mean that a great deal of honey will have to be marketed in barrels where formerly it went in 5 gallon cans.

PRICES PRODUCERS EXPECT

A great many have already contracted for their 1917 crop at prices ranging from 6¾ to 10 cents per pound. Most of those still holding off to sell when the honey is in hand expect to realize at least 10 cents per pound in jobbing lots. One said he would "give his white clover honey to the poor rather than to sell it for less than 11 cents." Many expect at least 12½ cents for extracted white in car lots.

There is no doubt but that the demand is excessive both in a jobbing way and locally for this time of year. Many report that they are having requests for honey from consumers direct that they cannot fill before the crop is harvested.

Two large honey sellers who deal direct with consumers expect to set their prices with a minimum as follows:

Five pound cans	-----	\$1.25 each
Ten pound cans	-----	2.00 each
Sixty pounds	-----	9.00

Of all years this is the year to push up the local sales on honey. Sixty pound cans for shipment can hardly be gotten, while the smaller friction top pails are still obtainable.

HONEY AND BEESWAX

CHICAGO, June 18.—As yet, none of the yield of 1917 has appeared on this market. As stated in former reports, there is no honey to be had among the jobbers, and very little is left in the hands of retailers; hence, there is a probability of higher prices on the new crop when it comes, and we should have some by the time this appears in print.

We expect now to get 17@18c per pound for the comb that will range from No. 1 to fancy and it may be that we can get a little more for a time. Extracted is commanding at the time from 12@14c per pound, for the reason that there is practically none offered in clover or the other white honey. Amber grades are also absent, including buckwheat. Beeswax is steady around 35c per pound.

R. A. BURNETT & Co.

LOS ANGELES, June 14.—Owing to unfavorable weather conditions the honey producing season is some six weeks later than usual; therefore, the lateness in submitting quotations. This condition very materially shortens the honey flow or producing period and prospects are that the production will be short, especially on certain grades, viz:

orange and sage honey. The unprecedented demand for honey with absolutely no carry-over stocks, together with the crop conditions that prevail, has caused a steadily advancing market which is firm at today's quotations which are as follows: Fancy white orange 15c; fancy white sage 15c; light amber sage, 11¼c; light amber alfalfa, 10½-10¾c.

HAMILTON & MENDERSON.

KANSAS CITY, MO., June 15.—Comb honey is about cleaned up on this market, and there is very little extracted except what is in the hands of the jobbers, and stocks are very light with them. The market here ranges from 10@14c a pound, according to quality and kind. The demand for extracted honey is limited, on account of the high prices.

C. C. CLEMONS PRODUCE COMPANY.

DENVER, June 20.—This market is cleaned out of both comb and extracted honey, and therefore have no prices to quote.

For clean yellow beeswax we pay 38c in cash and 40c in trade, delivered here.

THE COLO. HONEY PRODUCERS' ASS'N.
F. Rauchfuss, Mgr.

NEW YORK, June 18.—Regarding the condition of the honey market, so far as comb honey is concerned, old crop is fairly well

cleaned up, with the exception of lower grades, of which there is still some in the market, but no demand to speak of. As to No. 1 or fancy white, there is some which has been carried over, but the demand is not as good as it formerly was, and hard to find buyers, at around 13@14c, and this in a small way only.

As to extracted honey, the market appears to be in a very unsettled condition, and all kinds of prices are being quoted. Last year's crop is practically cleaned up, so far as we know, and receipts from the West Indies have been rather light of late, but it appears that a good crop has been produced in the Southern States, and is now beginning to arrive quite freely. The demand is fair, at prices varying from 90c to \$1.20 per gallon, according to quality.

HILDRETH & SEGELKEN.

SAN ANTONIO, June 18.—Very little honey of any kind has been marketed in Texas. Never was there such a failure in the spring crop. Summer surplus, with fair to normal prospects, will appear about July 1. Extracted is being contracted at 10c amber to 13c white bases. Bulk comb 12@15c. Comb, none quoted. Beeswax is in great demand at 35c cash, 38c exchange basis.

SOUTHWESTERN BEE CO.

ENLIST

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Prospects are bright for a bumper yie'd. Are you ready for it? Don't wait for prices to soar again, but place your orders now.

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Medina, Ohio

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Bee Primer for the prospective beekeeper or beginner. A 24-page pamphlet, finely gotten up, with illustrations. It gives a general outline of bees and beekeeping such as desired by the amateur. Two pages are devoted to instructions to beginners. Price, postpaid, 15 cents, or sent free with a year's subscription to American Bee Journal at \$1.00.

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Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with catalogs.

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"Griggs Saves You Freight"

Gray Caucasians



Early breeders; great honey gatherers; cap beautifully white, great comb builders; very prolific; gentle; hardy; good winterers. Untested, \$1.00. Select untested, \$1.25. Tested, \$1.50. Select Tested, \$2.00. The best all-purpose bee.

H. W. FULMER, Point Pleasant, Pa.

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The worth of a good queen, the worth of a good strain of bees—and also knows how worthless is a poor queen and inferior bees. Try our strain of three-band Italians; they will not disappoint you. Vigorous, prolific queens; bees that get the honey. Another thing, no disease in this locality. Tested queens of last fall rearing by return mail. \$1.00 each. Untested queens, single queen, \$1.00; \$5.00 per dozen.

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Unbeatable Exterminator of Rats, Mice & Bugs
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20 Years of Select Breeding Gives Us Queens of Highest Quality
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"I have tried queens from several different places and like yours best of all."—C. O. BOARD, Alabama, N. Y.
"We are only one mile from Lake Erie and exposed to high cold winds; in fact, this is the windiest place along the great lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 30 percent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs." Name furnished on request. North East, Pa.

Price List of Golden and 3-Banded Italian Queens by Return Mail

Untested.....	50c each	\$45 per 100	Tested.....	\$1.00 each,	\$90 per 100
Select untested.....	65c	50 per 100	Select tested.....	1.25	110 per 100

We guarantee safe arrival of all Queens—that they are very resistant to European Foulbrood, and, in fact, will give complete satisfaction. Wings clipped free of charge. Our capacity is 1500 Queens monthly

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The Double-Walled Massie Bee-Hive

Surest Protection for Bees—Increased Supply of
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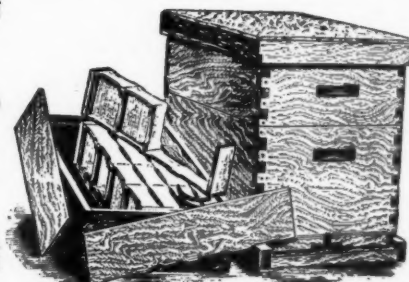


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Furnished in the clearest of lumber in either Cypress,
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VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance for swarming, and giving renewed energy to the bees. It is also equipped with a feeder without extra cost.

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We are also extensive manufacturers of **Dovetailed Hives** and all other **Apian Supplies**. If you are in the market for supplies be sure to get our prices before buying elsewhere. We will mail our large illustrated catalog and **special price list** to any one upon request

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We have in operation over 1000 nuclei. We are prepared to take care of your orders, both **LARGE AND SMALL**. Our queenbusiness for the past two months has been larger than ever before. Why? Because our stock gives results. We are offering queens at the following prices for **JUNE, JULY, AUGUST AND SEPTEMBER**:

	1	6	12	25	50	100
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Select tested...	2.00	10.00	18.00	Sel. breeding queens, 10.00		

Never before has this strain of bees been put on the market at such a low price. Take advantage and requeen your yard with the best strain on the market.

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PRODUCE WORKERS

That fill the supers quick
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Queen-breeder Rt. 1, Morgan Ky.

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Because it is the same **TASTE**, and the same **SMELL**, and the same **FIRMNESS**, as the **COMB** the Honey-bees make themselves. It is the more acceptable to them because it is not like their **OWN COMB**.

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I recently bought several hundred dollars worth of hives for my personal use from a firm which has never offered anything in cypress. I insisted on cypress bottoms and they had to be made especially to fill my order. I feel very sure that the use of cypress for bee hives, hive bottoms and hive stands will very largely increase as beekeepers learn more of the non-rot qualities of the all-heart wood of this species, which should be specified in all cases.

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